Canadian Centre for Occupational Health and Safety

Centre canadien d'hygiène et de sécurité au travail

National Research Council Canada

Conseil national de recherches Canada

Associate Committee on the Occupational Application of Ergonomics Research

Comité associé de l'application professionnelle des recherches en ergonomie

Ottawa, Canada
K1A 0R6

Occupational Repetitive Strain Injuries

A Workshop

P88-17E

Canadian Centre
for Occupational Health
and Safety

National Research Council
Canada

Associate Committee on the
Occupational Application of
Ergonomics Research

Occupational Repetitive Strain Injuries

A Workshop

Hamilton, Ontario

March 28 and 29, 1988

90-01081/

Canadian Centre
for Occupational
Health and Safety

OCCUPATIONAL REPETITIVE STRAIN INJURIES

A WORKSHOP

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Another CCOHS Workshop

OCCUPATIONAL REPETITIVE STRAIN INJURIES

Monday, March 28 and Tuesday, March 29, 1988
The Hamilton Convention Centre, Hamilton, Ontario

It will:

- enhance your awareness of the topic
- let you explore the fullest degree of consensus possible
- establish a way forward

It will give you an opportunity to:

- discuss issues in occupational health and safety with labour, management, professionals, governments
- together define areas of agreement and those needing further discussion
- be an active participant in finding a way forward
- disseminate these areas of agreement and issues still needing discussion

It will not:

- give you all the answers
- give you instruction
- allow you to be a passive listener

Participants in previous workshops have said:

"A remarkable degree of agreement—I didn't think it could be achieved, but it was."

"This is the first time I have had the opportunity to openly and frankly discuss an issue of this importance with my counterparts in a non-confrontational atmosphere."

Come and share the experience of a CCOHS workshop.

The Canadian Centre
for Occupational Health and Safety

with

The Associate Committee on Ergonomics of the
National Research Council of Canada

A Workshop

OCCUPATIONAL REPETITIVE STRAIN INJURIES

Monday, March 28 and Tuesday, March 29, 1988
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PARTICIPANT AGENDA

Monday, March 28, 1988

8:15 am	REGISTRATION AND COFFEE – Albion AB Foyer
9:00 am	WELCOME – Albion AB The Honourable Martin O'Connell Chairman, Council of Governors Canadian Centre for Occupational Health and Safety
9:15-11:30 am	**DIFFERENT PERSPECTIVES** Orientation Panel – Albion AB Research – Richard Wells, Associate Professor, University of Waterloo Labour – Larry Stoffman, Director, Occupational Health and Safety, Local 1518, United Food and Commercial Workers Engineering – Fred Buchanan, Manager, Industrial and Human Engineering, Northern Telecom Compensation – Raymond-Marie Dion, Physician, Adjudication Department, CSST (Commission de la santé et de la sécurité du travail du Québec) Medicine – Lisa Doupe, Plant Physician, General Motors Questions and Discussion

11:30-12:30 pm	**What needs to be done?** TRIPARTITE WORKSHOPS
12:30-1:30 pm	LUNCH – Webster AB
1:30-3:00 pm	**What needs to be done? (cont'd)** TRIPARTITE WORKSHOPS
3:00-3:15 pm	COFFEE – Albion AB Foyer
3:15-5:15 pm	**Who should be doing it?** TRIPARTITE WORKSHOPS
6:30 pm for 7:00 pm	Cash Bar – Webster AB & Lounge BUFFET DINNER

Tuesday, March 29, 1988

9:00-10:00 am	**Where should we start?** TRIPARTITE WORKSHOPS
10:00-12:00 noon	**Can we agree?** HOMOGENEOUS WORKSHOPS
12:00-1:00 pm	LUNCH – Webster AB
1:00-2:30 pm	**Plenary Session – The Way Forward** REPORTS FROM HOMOGENEOUS WORKSHOPS

2:30-2:45 pm	COFFEE – Albion AB Foyer
2:45-4:00 pm	**Will it work?** — Senior Executives Respond
	REACTION PANEL
	Labour – Dick Martin, Executive Vice-President, Canadian Labour Congress
	Compensation – Patricia Wellman, Director, Policy Development Branch, Ontario Workers' Compensation Board
	Industry – Franz Reiterer, Vice-President, Employment Relations, Magna International Incorporated
	Government – Bill Rozel, Executive Director, Work Site Services, Occupational Health and Safety Division, Alberta Community and Occupational Health
4:00 pm	**ADJOURNMENT**

Summary

Repetitive strain injuries are increasingly seen as a problem in workplace health and safety in occupations ranging from clerical through electronics to packaging, instrumental music and others. A workshop to heighten awareness of the problems and to discuss a way forward was held by CCOHS on March 28 and 29. The workshop was requested and assisted by the National Research Council Associate Committee on Ergonomics.

The workshop drew enthusiastic response. It was attended by a sell-out crowd of over 100; late would-be registrants unfortunately had to be turned down. Participants represented labour, management and professionals. There was good Compensation Board representation.

The opening panel examined repetitive strain injuries from the perspectives of research, labour, engineering, compensation and medicine. These were presented by, respectively: Richard Wells, Associate Professor, University of Waterloo; Larry Stoffman, Director, Occupational Health and Safety Local 1518, United Food and Commercial Workers; Fred Buchanan, Manager, Industrial and Human Engineering, Northern Telecom; Raymond-Marie Dion, Physician, Adjudication Department, CSST; Lisa Doupe, Plant Physician, General Motors.

After tripartite discussion on what needs to be done, who should be doing it and where we should start, labour, management and professionals reported in plenary session. A remark that has been heard at every one of the Centre's workshops was heard again as it was reported that the congruence of conclusions within and among the groups was remarkable.

Major areas of agreement were:

- there is a serious need for information, awareness and central data;
- there must be emphasis on reporting mechanisms such as a standardized reporting form;
- there is a need for clearer WCB policies nationally;
- emphasis must be placed on prevention and job design;
- there was no great enthusiasm for regulations (although some felt they were needed) but a great deal of support for a national code of practice and equipment standards;
- monitoring was addressed but not supported; it was seen as an additional source of stress with no redeeming prevention feature;

Summary
continued

- there was general support for ergonomics committees in the workplace.

Other points:

- a statement, also made at a previous workshop, was on the need to include job design in professional curricula as varied as those of engineering, medicine and business;
- there was emphasis on the importance of return to meaningful work;
- the commitment of senior management was seen as essential to the prevention of injuries and the promotion of well-being in the workplace.

The closing panel attended the plenary session and reacted to the labour, management and professional group reports. On the panel were David Bennett, National Representative, Health and Safety, substituting for Richard Martin, Executive Vice President, Canadian Labour Congress; Patricia Wellman, Director, Policy Development Branch, Ontario Workers' Compensation Board; Franz Reiterer, Vice-President, Employment Relations, Magna International Incorporated; William Rozel, Executive Director, Work Site Services, Occupational Health and Safety Division, Alberta Community and Occupational Health. The closing panel represented, respectively, labour, compensation, industry and government.

Their comments can be summarized as agreement on the need for information; the need to define problems of repetitive strain injuries; the need for Canadian guidelines; the need for better design of WCB forms and good reporting mechanisms; the need for commitment at all levels of organizations; the emphasis on prevention.

Participants challenged both the NRC Associate Committee on Ergonomics and CCOHS. The NRC Associate Committee to:

- develop standard reporting procedures for data gathering;
- develop a Canadian data base;
- develop guidelines for a code of practice.

CCOHS to:

- receive this information and disseminate it as quickly as possible;
- prepare and disseminate information on repetitive strain injuries understandable to workers, management and professionals.

Welcome

Lillian Vine

Martin O'Connell is Chairman of our Council of Governors, the tripartite body which governs the Centre; it represents government, labour and management throughout Canada. Unfortunately, he is recuperating from the flu and could not be with us today. He, and our President and Chief Executive Officer, Gordon Atherley, wish you great success with your deliberations.

The Centre started holding these workshops a little less than two years ago. The Centre is the information resource in occupational health and safety. Our Council of Governors felt that we could add to the information. In doing the information, we graphically came to see that there is information that is factual, numbers or data; but there is another set of information which has less to do with data and more to do with opinions, judgments, values, considerations and concerns, and that information is not just generated by scientists, computers, libraries or research. That information with value added comes from the judgments of people who have responsibilities to occupational health and safety. We, the staff of the Centre, realized we could not generate that kind of information but we could bring together people with responsibilities in a workshop situation so that they would consider the facts, opinions and dimensions of problems, and they would add to the value of the information. That is what this workshop is about, not just data, but the difficult issues, the judgments, the values added to this very vexing issue of repetitive strain injuries. We have held workshops on drug testing, medical monitoring, back injuries in the workplace and training and education in chemical information; several are in the planning stages. Anybody can request the Centre to do a workshop. It becomes very exciting when, at each workshop, I see somebody in the audience with whom I am working on another one. Serge Trudel is here; we are working together on a workshop on occupational deafness for October.

This workshop on repetitive strain injuries was requested by the National Research Council Associate Committee on Ergonomics. Gary Cwitco, Robert Webb and I planned this over the past several months. It's obvious that the issue is of burning interest and of great concern because the attendance at this workshop has surpassed all my, though not Bob and Gary's expectations; I feel badly that we could not accommodate all those who wanted to come. You will be working most of the time in small groups. There will be two plenary sessions—this one and the final one.

After each of our workshops, we have heard the same comments: "there was a remarkable degree of agreement; we didn't believe that it could be reached, but it was" and "this is the first time I have had an opportunity to discuss issues of importance in a

Lillian Vine *continued*

non-confrontational atmosphere with my counterparts in labour or management or the professions." From the reports at the plenary sessions and the introductory panel, we produce a set of Proceedings; those Proceedings are being used by Canadians in a multitude of ways as a lobbying tool; as a basis for a training program; to further the agreements. People look to these workshops as a concerted effort of labour, management, professionals, government to find a better way of doing things. The workshops are not meant to be a teaching exercise but a participative exercise.

The National Research Council Associate Committee on Ergonomics wanted to lower the price for this workshop; to do that they have subsidized some of the costs, not in cash, but in services. It has been fun getting to this point. I think it's going to be a productive workshop. I would like to call on Dr Robert Webb to add a few words of welcome.

Robert Webb

Good morning. I want to welcome you and to thank our eminent speakers for committing so much time to start off this workshop.

I would like to say a few words on the role of NRC associate committees. The National Research Council has about 20 associate committees that offer advice on scientific topics of national interest and ours is in the area of ergonomics. One of our major concerns is that the process of developing or disseminating scientific knowledge has not been a very effective collaborative process, especially in the area of knowledge about human factors or ergonomics. The reason for generating scientific knowledge is for us to use it to improve our individual, economic, occupational well-being.

The Associate Committee welcomes the initiative taken by the Canadian Centre in developing this sort of workshop. The workshops bring together people from a wide variety of backgrounds. They get away from a purely instructional approach and encourage a collaborative approach with the participants making use of the knowledge they bring with them to develop an action plan.

I would also like to thank Lillian Vine and Gary Cwitco. We have been working very hard over the last six months trying to develop the structure and the ideas for this workshop. I am sure these two days are going to be very productive and interesting. I wish you every success in drawing some practical conclusions at the end.

Orientation Panel
Different Perspectives

Orientation panel: different perspectives

Lillian Vine

I am going to introduce the speakers much more briefly than they deserve, before each speaks. We will leave time for discussions, questions, and comments.

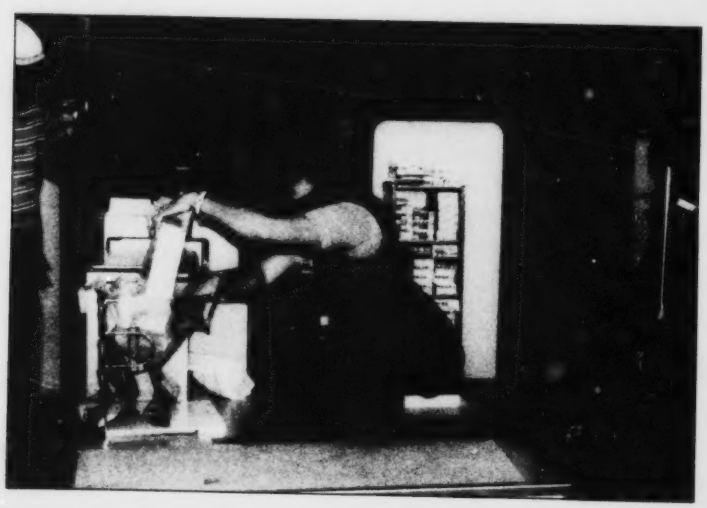
The first speaker, Dr Richard Wells, is an Associate Professor of Kinesiology at the University of Waterloo. He was trained as a Mechanical Engineer at the University of Manchester, England and at McMaster University in Hamilton. He has broad interdisciplinary experience in studying the loadings on the human musculoskeletal system and their relationship to injury. He and his colleagues' current research interests include measuring the motions of the hand and arm during occupational tasks and attempting to relate these motions to musculoskeletal disorders, and developing a health reporting form which will enable better recording of chronic musculoskeletal disorders. He is currently a Visiting Associate Professor at the Centre for Ergonomics, University of Michigan. I am delighted he is with us this morning.

Research perspective

Richard Wells

I would like to talk about my perspective as a researcher in the field of repetitive strain injuries. My primary message is that these disorders have a basis in the physical stressors in the workplace but this is not to deny the importance of other psychological, organizational and social stressors.

Slide 1



We see repetitive strain injuries in a wide variety of situations and body parts. Slide 1 shows an example from the retail food trade.

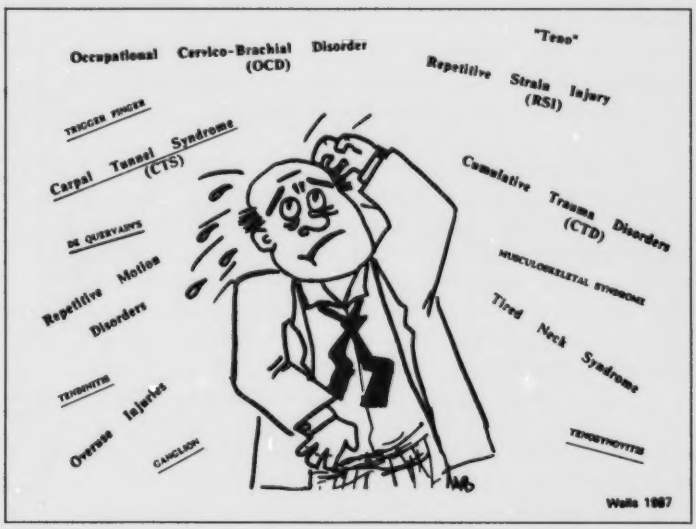
Richard Wells *continued*

We might find musculoskeletal disorders in the shoulder region, the low back, the feet and legs of the worker shown. We see them in manufacturing where people work with tools and in seemingly innocuous tasks such as inspection tasks, shown in Slide 2, where the worker is required to maintain constrained postures for long periods of time.

Slide 2

I would like to stress five areas. The first is diagnosis and terminology; what sorts of disorders are we talking about? Secondly determination of cause and effect: What causes produce these disorders? Thirdly, what are the occupational risk factors? Fourthly, what are the major initiatives we have seen in other countries? And fifthly, I want to finish by noting what we do know and what we don't know.

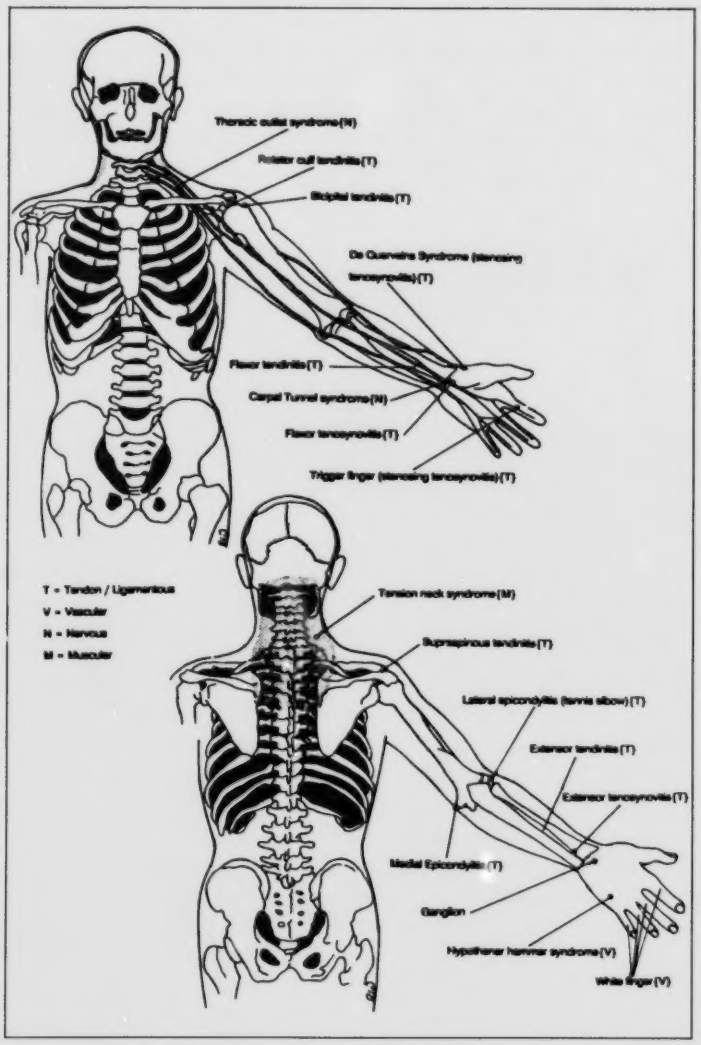
Slide 3



Diagnosis and terminology:

A lot of terms are currently in use to describe these disorders; repetitive strain injuries, cumulative trauma disorders, ganglion, tenosynovitis (Slide 3). Are they all interchangeable or do they have specific meanings? If we move to an example of disorders of the upper limb (Slide 4), we see a number of specific conditions.

Slide 4



These range from problems with the nervous system in the fingertips; tendon disorders; extensor tendinitis and De Quervain's Syndrome through to muscle problems and tension neck syndrome. The structures which are affected may be nerves, tendons or muscles and the specific disorders manifest themselves in specific anatomical sites. Let us look in slightly more detail at one disorder: the muscles that control the thumb pass over the wrist joint; at the point the tendons pass over the wrist, we get a problem called De Quervain's Syndrome characterized by pain in that area. There are both clinical signs and clinical symptoms: the clinical symptoms mean that the person has pain; clinical signs mean that diagnostic tests can be used to determine which structures are affected. If

Richard Wells *continued*

we look again at the terminology used in Slide 3, there are those I call specific diagnoses: they determine a body part and a structure which is injured. They are shown underlined on Slide 3.

Some disorders of the musculoskeletal system appearing in the workplace have symptoms of pain but have very diffused or ill-defined signs. It is difficult to give a specific diagnosis. This is especially true of muscle pain. Many painful conditions that involve muscles do not readily lend themselves to simple diagnosis. These tend to be classed as repetitive strain injuries. No specific diagnoses are available for many of these disorders; the general or non-specific term is used both as an umbrella term and for the conditions where there is no clear-cut diagnosis available.

There are a number of terms synonymous with repetitive strain injury. In the United States, they prefer the term Cumulative Trauma Disorders. In Japan, they prefer Occupational Cervico-Brachial Disorder. Another often used term is Overuse Injuries.

Slide 5

REPETITIVE STRAIN INJURY (RSI)...

A COLLECTIVE TERM FOR A RANGE OF CONDITIONS CHARACTERIZED BY DISCOMFORT OR PERSISTANT PAIN IN MUSCLES, TENDONS AND OTHER SOFT TISSUES, WITH OR WITHOUT PHYSICAL MANIFESTATIONS.
RSI IS USUALLY CAUSED OR AGGRAVATED BY WORK AND IS ASSOCIATED WITH REPETITIVE MOVEMENT, SUSTAINED OR CONSTRAINED POSTURES AND/OR FORCEFUL MOVEMENT.
PSYCHOSOCIAL FACTORS, INCLUDING STRESS IN THE WORKING ENVIRONMENT MAY BE IMPORTANT IN THE DEVELOPMENT OF RSI.
SOME CONDITIONS WHICH FALL WITHIN THE SCOPE OF RSI ARE WELL-DEFINED AND UNDERSTOOD MEDICALLY, BUT MANY ARE NOT, AND THE BASIS FOR THEIR CAUSE AND DEVELOPMENT IS YET TO BE DETERMINED.

NATIONAL HEALTH AND SAFETY COMMISSION
OF AUSTRALIA

Many people have defined repetitive strain injuries or cumulative trauma disorders. One such definition is seen in Slide 5. The National Health and Safety Commission of Australia emphasizes that repetitive strain injuries is a collective term for a wide range of musculoskeletal disorders characterized by pain and discomfort with or without physical manifestation (clinical signs); some of

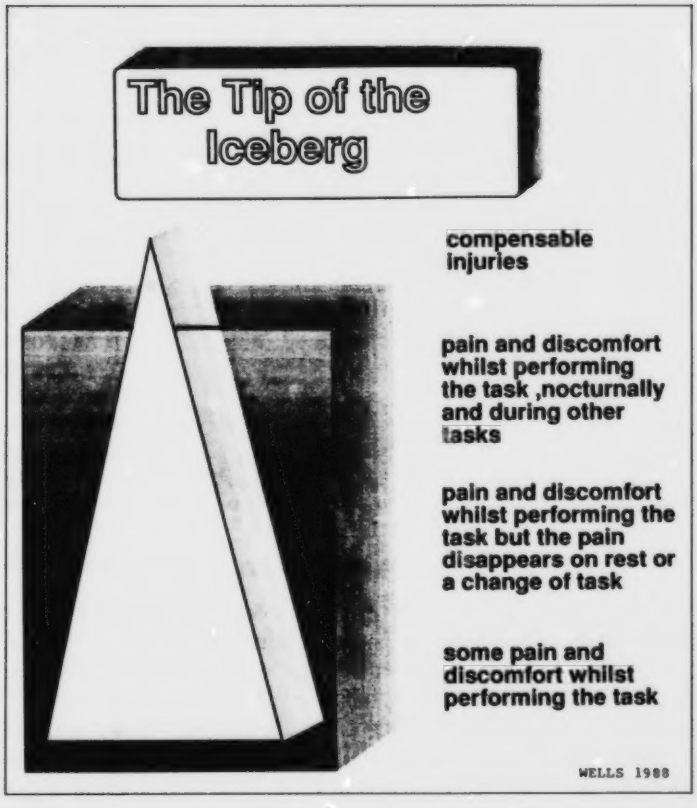
Richard Wells *continued*

these conditions are well-defined and some are fairly poorly defined. You can imagine what problems that causes in reporting and in trying to do follow-up work of an epidemiological nature.

There is also a causative statement in this definition—that repetitive strain injuries are caused or aggravated by work. That's associated with repetitive movement, sustained or constrained posture and forceful movement. It doesn't negate other contributing factors to repetitive strain injuries—the psychological and social factors; these are relatively little understood and even less researched.

Based on that definition, how big is the problem in Canada and Ontario? I won't try to answer that question, but I will point out some things we should consider before we try to answer it.

Slide 6


The Tip of the Iceberg
compensable injuries
pain and discomfort whilst performing the task ,nocturnally and during other tasks
pain and discomfort whilst performing the task but the pain disappears on rest or a change of task
some pain and discomfort whilst performing the task
WELLS 1988

I have likened musculoskeletal disorders of the Canadian workforce to an iceberg; icebergs are mostly underwater. At the tip we have those disorders that appear as compensable injuries. Other parts of the population may be experiencing pain and discomfort to

Richard Wells *continued*

greater or lesser extent. We have a continuum of pain and discomfort of musculoskeletal origin ranging from some pain and discomfort while performing tasks through to disabling pain. Each of these is a valid measure of the musculoskeletal health of the workforce for different purposes. Currently, we tap into two of these—compensable injuries figures obtainable through compensation records; and questionnaire responses which ask about people's musculoskeletal health—they tend to tap in at a lower level and you tend to get larger numbers. Each of these has its use. In any discussion on the size of the problem, we ought to include some consideration of what level we want to tap into this continuum.

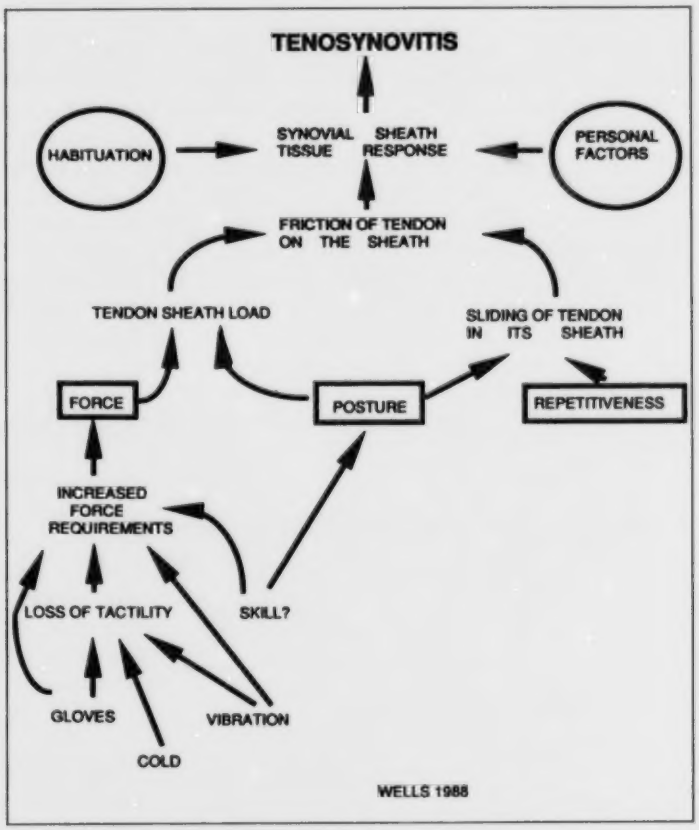
Causes of Repetitive Strain Injuries:

There is evidence going back to the 16th and 17th centuries that certain occupations exhibited certain characteristic musculoskeletal disorders. Gamekeeper's Thumb, a disorder of the thumb, appears today as Postman's Thumb. There have been suggested relationships between certain postures and disorders. The circumstantial evidence is strong but the exact causes, biomechanically and biologically, are not clear. For instance, people haven't been able to produce, to my knowledge, these types of injuries in animals.

If we look at a related discipline, sports medicine, we see similar types of injuries. Some of the guiding principles of sport medicine are "too much, too soon" and "too much, too long." Too much too soon refers to the tissues of the body having to adapt to the work or task being done. These tissues may be the synovial linings of tendon sheaths or they may be muscles or tendons. People starting jobs need a period of work adaptation. People returning to work from a summer break starting into full production right away may experience problems. The tissues of the body need to adapt to the demands placed on them. If they can't adapt, some form of disorder will occur. Too much—too long. Too large a stress placed on the human body for too long will exceed its repair and adaptive capabilities. What we don't know is what is too much and what is too long.

I'll present some biologically and biomechanical reasonable causes for a typical injury of this type, tenosynovitis.

Slide 7



The extensor tendons of the fingers, the tendons that run from the muscles of the forearm to the fingertips and straighten the fingers run through a tendon sheath on the back of the wrist. If the tendon/sheath are overworked they become inflamed. This condition is called tenosynovitis. Three factors: force, posture, repetitiveness appear again and again in the ergonomic and biomechanical literature on these disorders. Given that these factors exist in the workplace, we can show that the force and posture produce loads in the tendon sheath and that the repetitive movement causes a sliding of the tendon in the sheath. These together create friction of the tendon in the sheath and this will lead to some tissue response in the tendon sheath. If this is not too high, the tendon sheath will adapt, given certain other conditions such as habituation to the work and to personal factors. If that tendon sheath cannot adapt, we may end up with a disorder of tenosynovitis. Contributing factors are physical agents, stresses, skill level. These are all known to be associated with the development of repetitive strain injury problems.

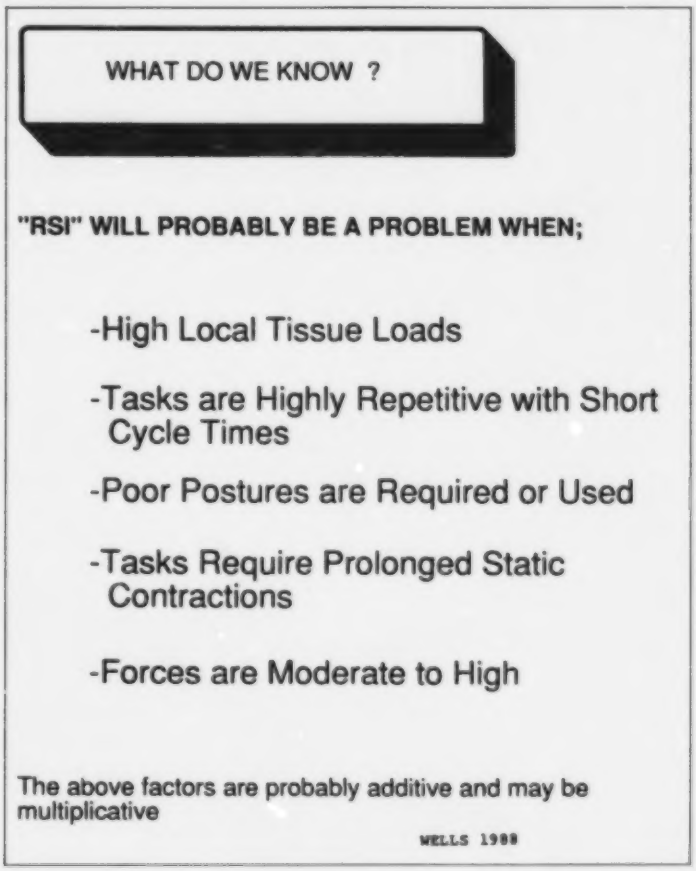
Richard Wells *continued*

If we are not completely sure of the mechanisms, we are going to have a hard time with dose/response, which goes one stage further than cause/effect—what dose of mechanical work will cause what response in terms of injury or adaptation. Dose/response is not whether repetitive reflexion causes or aggravates a case of tenosynovitis, but how many repetitions cause it. About dose/response relationships—how much work causes what problems—we are almost completely in the dark.

Many people in many places have been looking at this problem. All I can do is hit some points that may be worthwhile in discussion. We can look at approaches to repetitive strain injuries in terms of clinical, case studies, rehabilitation and treatment and diagnosis; epidemiological, the distribution of these disorders in different populations; ergonomic relationships between tasks and disorders; and psychiatric (because there is some radical viewpoint that these don't exist at all—that they are hysterical conversion syndromes). In terms of major initiatives, I have singled out a few countries. Australia has had a lot of press on repetitive strain injuries. The National Occupational Health and Safety Commission produced a report and tried to document an approach and a model code of conduct and coordinated research within Australia. In Great Britain, there was alarm over the Australian experience. Recently the Health and Safety Executive has funded some projects at the University of Birmingham and the University of Edinburgh on repetitive strain injuries. These are epidemiological, ergonomic and clinical in nature.

Japan was an early player in the field. In the late '60s, there was concern about what, in Japan, was called occupational cervico-brachial disorders in film rollers and cashiers. Through some coordinated committees guidelines were developed on many of the things we will be talking about today. The Nordic countries have always had a strong ergonomic approach. In the last four years they had a standardized self-administered questionnaire to try to document repetitive strain injuries; that questionnaire is now available in English. NIOSH in the USA had identified musculoskeletal disorders as one of the big ten problems in the workplace.

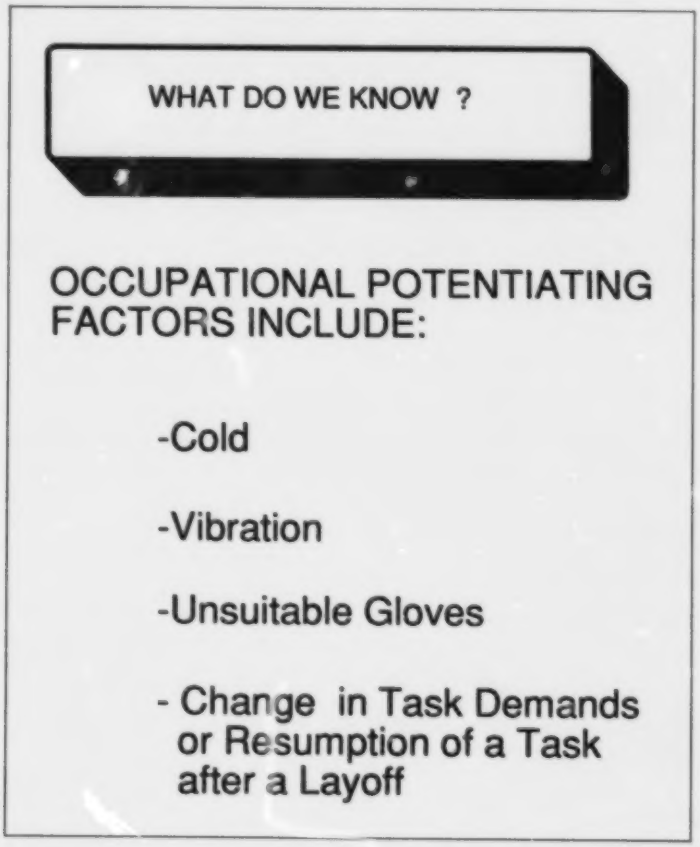
Slide 8


WHAT DO WE KNOW ?
"RSI" WILL PROBABLY BE A PROBLEM WHEN;
-High Local Tissue Loads
-Tasks are Highly Repetitive with Short Cycle Times
-Poor Postures are Required or Used
-Tasks Require Prolonged Static Contractions
-Forces are Moderate to High
The above factors are probably additive and may be multiplicative
WELLS 1989

What We Know:

I feel that the physical stresses in the environment are the cause of Repetitive Strain Injuries and that other factors only influence or affect the outcome. Slide 8 shows the main biomechanical risk factors. For example, scissors that press against the sides of the fingers cause problems with the nerves that run there; tasks that are highly repetitive with short cycle times cause problems; poor postures usually mean high tissue loads as does the need for static contractions to be held, such as holding the arms up over the shoulders for a large part of the workday. If forces are moderate or high, people tend to get problems. If there is more than one of these coexisting effects, they may multiply each others' effects; low loads with moderate repetition in unfavourable positions may cause problems.

Slide 9


WHAT DO WE KNOW ?
OCCUPATIONAL POTENTIATING FACTORS INCLUDE:
-Cold
-Vibration
-Unsuitable Gloves
- Change in Task Demands or Resumption of a Task after a Layoff

Slide 9 illustrates some of the other factors which, by themselves do not cause problems but in conjunction with the above factors are troublesome.

What We Do Not Know:

1. Because of the problems of diagnosis and reporting, we are not completely sure about the health status of Canadians with respect to repetitive strain injuries.

2. There are questions regarding influence of personal and social factors such as, is strength important? Is gender important in the development of these disorders? Or, if we take the task into consideration, do men and women get problems equally?

3. Dose/response relationship would be useful if we wanted to regulate exposure to certain tasks in the workplace as we do to chemicals.

Richard Wells *continued*

Repetitive strain injuries are not a new phenomenon. They have been reported throughout occupational health writings and most certainly existed long before that—whenever people were engaged in repetitive monotonous tasks, especially if poor postures and high loads were also present. These mechanical factors are the primary cause of occupational musculoskeletal problems but other factors such as stress and work organization have been found to play a role in the development of the problem. These physical stressors can be readily tackled using ergonomic approaches; but the goal of a healthy, productive workplace can only be achieved by recognizing and controlling the many factors important in the development of repetitive strain injuries.

Lillian Vine

Our next speaker is Larry Stoffman. He is the Director of Occupational Health and Safety for the British Columbia Local of the United Food and Commercial Workers. He is a Co-Director of Union Services, a labour research and education consulting firm, whose projects have included the investigation of occupational health problems in sawmilling, mining, office and retail industries. Larry has authored several research articles on repetitive strain injuries. He acts as a compensation advocate and labour representative before the Provincial (British Columbia) Workers' Compensation Board and Ministry of Labour. He was a guest lecturer on repetitive strain injuries at the Stanford University Medical School 1986 Cumulative Trauma Symposium, and at the 1987 Annual Meeting of the American Public Health Association.

Labour perspective

Larry Stoffman

Dr Wells has introduced us to many of the issues that arise when considering RSIs. I will address some of these topics from a labour perspective. I want to touch on three key areas: prevalence rates across the country; prevention strategies and obstacles to their implementation (encountered and anticipated); and compensation policies.

Repetitive strain injury is an occupational health issue of profound significance for many Canadian workers. There is an epidemic of such injuries occurring in a number of workplaces, in a variety of industries.

Many of these injuries remain undocumented, many workers are uncompensated, and many have little or no access to proper rehabilitation or the right to return to modified work. A number

Larry Stoffman *continued*

of jurisdictions outside Canada are addressing this issue. RSI is becoming increasingly well documented through well-funded occupational health research and these jurisdictions have adopted quite effective legislation, regulations and compensation policies (1, 2, 3). Canada is lagging far behind in this process.

Redesign of work tasks and increasing worker participation and control over the organization of work processes are proposed again and again as preventive measures in the published occupational health research on repetitive strain injuries (4, 5, 6). One of the problems is that behind those well thought out and effective proposals, lie some assumptions: that employers are going to be committed to implementing those kind of measures; that where that commitment doesn't exist, there does exist effective legislation, regulation or standards to protect workers from ergonomic hazards; that those who are injured receive adequate compensation and treatment (training or rehabilitation) and can return to a modified or safer work situation.

That kind of commitment, those kinds of worker protections, are largely lacking in Canada. Our record is dismal. I would like to illustrate some of the problems experienced by thousands of Canadian workers through looking at three representative case histories.

Case I—Supermarket Cashier

Slide 10

Enid has worked as a cashier for fifteen years. She and six of her co-workers have developed pain in the shoulders and lower back since a new work procedure, scanning and bagging in one motion,

Larry Stoffman *continued*

was initiated at their workplace. Symptoms were caused and/or aggravated by placing a wire rack in a bagwell which protruded well above counter height, about 12 inches, and lifting loaded bags out of the well; twisting to a cart behind aggravated the situation. She and the others asked to be allowed to change the work procedure to scan and fling to the rear deck followed by packing. The employer refused and threatened to discipline any cashier who undertook that different work procedure.

Several people at two different locations in the lower mainland subsequently insisted that they be allowed to use an alternative working method and cited a pertinent right-to-refuse regulation in the British Columbia legislation. The provincial compensation board and an inspector were asked to make a final decision. The inspector reported on site that he did not feel competent to evaluate an ergonomic problem. He cited the lack of specific ergonomic regulations that would allow him to evaluate such a situation.

The union and the company negotiated a temporary solution whereby employees able to supply medical documentation of injury would have their request to use an alternative procedure considered. Only three days ago, the compensation board in British Columbia sent me a document indicating that, in future, this particular ergonomic problem would not be considered extreme enough to warrant work stoppages. We will be continuing that debate on my return to British Columbia.

In the food retailing industry overall, the union has estimated a repetitive strain injury prevalence rate of 30% to 35% among cashiers. Approximately one-quarter of related compensation claims are turned down.

Case II

Virginia is an experienced fish packing plant worker. She developed tendinitis and a ganglionic cyst performing a roe popping operation in a BC fish plant. She missed work most of last fishing season and is now undergoing further treatment for the cyst, and she will likely miss the current herring season on the coast. She is a single parent and now has no source of income. Although she won an appeal on the ganglionic cyst as a work-caused injury, the provincial board refused to implement the award. Of 145 women surveyed working in this packing plant, 87% reported swelling, pain and soreness in their wrists. This was a 35% increase over previous seasons, primarily due to change in the roe popping procedure.

Larry Stoffman *continued*

The workers had been instructed to twist fish with their hands, in a clothes-wringing motion, to pop the roe, rather than using sticks to scrape the roe out. This led to the dramatic increase in RSIs.

In another plant, the introduction of automatic fish washing machines resulted in massively increased work rates and led to complaints by 90% of the workforce. The union had asked for a number of administrative controls such as additional rest periods and job rotation, but the employer refused to implement those controls. This led to a mass work refusal. The hazards identified remain uncontrolled.

Case III

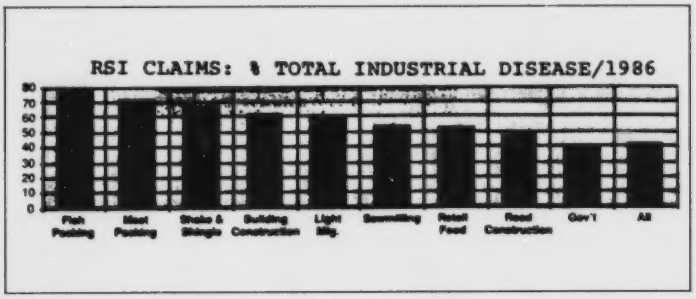
Joan was a food service worker for the past ten years. She developed bilateral tendinitis and carpal tunnel syndrome as a result of repetitive lifting of loaded trays and rolling out of dough. A request to modify the work procedure was refused. She subsequently went on compensation. The bilateral tendinitis was accepted after an extended appeal; the carpal tunnel syndrome was turned down. She is not receiving any compensation benefits and is not working. She was told by her specialist not to return to that type of employment. Her union has referred her to a specialist in physical and rehabilitative medicine for further testing and assessment to see what kind of retraining she may be able to undergo. She and her union are bearing the costs.

These cases raise a number of key issues which we need to discuss further in the next two days. We must develop a coordinated strategy if we are to reduce the toll of repetitive strain injuries on the Canadian workforce. Our strategy has to address prevalence rates, occupational cause, obstacles to prevention and inadequate compensation.

Prevalence

Very little formal epidemiology concerning repetitive strain injuries is being done in Canada. Union surveys indicate injury rates ranging anywhere from 30% to 80% among affected workers, while many repetitive strain injuries are denied by provincial compensation boards due to restrictive and outdated compensation policies. In 1986, repetitive strain injury claims classified as "joint irritations" still accounted for 42% of all industrial disease claims in BC, a sharp increase from 33% in 1983.

Slide 11



Many workers are afraid to report RSIs for a number of reasons. Many seek private benefits and try to avoid any contact with workers' compensation boards because of the experiences of other workers trying to get claims accepted. Official statistics are therefore just the tip of the iceberg.

Occupational health research in the United States, Japan, New Zealand, Australia and Scandinavia indicates that prevalence rates of 25% to 35% are not uncommon especially in jobs that require frequent repetition and some force (7). A national prevalence survey is clearly needed in Canada if only as part of a concerted effort to impress upon governments and employers the need to immediately address this issue.

Etiology

Repetitive work, increased work rates and hazardous forms of work organization have often been identified as the main causes of repetitive strain injuries, where epidemiological investigation has been carried out (7). Case histories, union surveys, and ergonomic research have verified what is evident for many workers from their daily exposure to these hazards. This increasing epidemiologic evidence of work causal association has been well summarized in the background literature the Canadian Centre has sent to all participants; in fact, there are stacks of literature now accumulating on this topic. A great deal of this research is in sharp contrast to many current policies regarding compensation coverage for repetitive strain injuries in Canada.

Prevention

Prevention strategies focus on the need to redesign workstations and increase employee involvement in developing a safer work procedure and work organization. Injured workers and their labour organizations have become quite active in proposing basic standards for work design. For example, cashiers have met with their counterparts in Scandinavia and other countries and have proposed fundamental changes to their workstations.

Larry Stoffman *continued*

Work enlargement, work rotation, rest periods and other administrative controls have been proposed by fish plant workers. Most of these suggestions are ignored or actively opposed by management.

There has been no involvement by government agencies, particularly in Canada, that would give some force to such proposals. We have concluded that there is a simple reason for this. Management in many industries view increasing workers' involvement in issues such as work design or work organization as an assault on management's right to direct the labour force (8). In Canada, provincial governments and the federal government have lacked the political will to effectively address this problem through appropriate occupational health legislation. Legislation is necessary in this country to compel all employers to recognize the problem, to provide ergonomically safe work environments and to ensure effective worker participation and decision-making power to achieve this.

This is not an impossible task. Norwegian (1) and Swedish (9) occupational health codes of practice and legislation are perhaps the most well known. In those cases, the implementation is very basic. Generic ergonomic standards, such as optimal working heights, workstation heights and working ranges have been enforced and implemented through a safety committee system. In those jurisdictions committees have an expanded and strengthened mandate, and generic ergonomic standards have been very effective in controlling repetitive strain injuries. Canadian trade unions have often based their own recommendations to provincial boards on this western European model.

Slide 12

SECTION 4 : SWEDISH ORDINANCE

WORK SHALL BE DESIGNED IN SUCH A WAY THAT THE BODY CAN BE RELIEVED OF STRESS AFTER PROLONGED OR FREQUENTLY REPEATED WORKING OPERATIONS AND ALSO, IF NECESSARY, WHILE SUCH OPERATIONS ARE IN PROGRESS.

In BC, we have drafted a number of regulations regarding job design and workplace ergonomics and have asked that they be implemented as part of our provincial legislation. Unfortunately,

Larry Stoffman *continued*

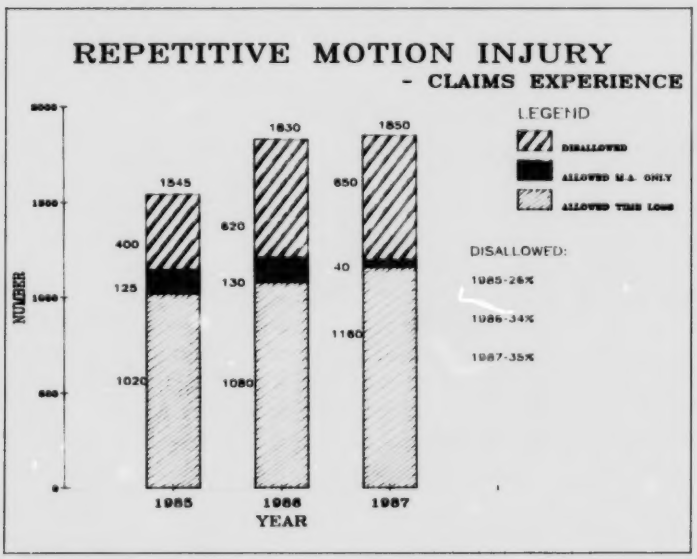
the Ministry of Labour and the Provincial Board have refused to act, essentially for fear of upsetting the employer constituency.

Compensation

To turn to compensation coverage for a moment, a substantial revision of industrial disease schedules throughout the country that takes into account an up-to-date, fairer and more accurate definition of repetitive strain injuries is long overdue. The Centre distributed a brief review of adjudication practices with the background material. It indicates that there is currently a heavy emphasis on change of employment or unaccustomed use of the affected limb as the main occupational factor involved. The Quebec legislation, when applied, is the exception; it is much more accurate because it reflects more current research.

The emphasis on unaccustomed activity is often used to the exclusion of other identified risk factors such as repetitive movement, awkward work position and the use of force. This has resulted in the denial of many legitimate claims.

Slide 13



This illustrates the horrendous situation in BC, where ten times more RSI claims are rejected (35%) than the overall rejection rate for all injuries (3%).

Less restrictive compensation policies will not only result in benefits needed by injured workers, but will also, in many jurisdictions,

Larry Stoffman *continued*

lead to increased assessment rates for employers who have bad injury rates. That will be another incentive for those industries to address work design issues. That in turn may help break a cycle where injured workers are denied proper rehabilitation and an opportunity to return to any kind of modified work situation.

Conclusions

If we are serious about promoting workers' health and safety, we have to develop a coordinated national strategy on repetitive strain injuries. We at least need to implement national and provincial standards and proper compensation policies. We have to more fully define workers' right to a safe working environment. To give that some meaning, *workers need some decision-making power over the design and procedures of work*.

Too often, simple cost-effective ergonomic recommendations made by affected workers are completely ignored. This is because safety committees in this country only have the mandate to make recommendations, unlike Scandinavia, where the mandate is to actually make decisions.

I don't believe it will be easy for us to achieve effective controls over RSI in Canada. It will require education of the workforce, the public, legislative debate to be sure, and major changes to many of our compensation board structures. But policies and regulations can be developed and implemented that really do have positive impact in the workplace.

The prevention of repetitive strain injuries raises some fundamental issues in the workplace that have been properly addressed for some time by the World Health Organization (10). It is time we went beyond exhorting workers to work safely but evermore rapidly. We must adapt the workplace to the needs of the workforce. I don't think what has already been accomplished in the European jurisdictions is an idealistic concept applicable only to the Europeans. We are tired of waiting for basic ergonomic safeguards in this country. We are ready to implement them in Canadian Workplaces today.

Lillian Vine

I have described Centre workshops as not a place to make a plan of action but rather to reach common ground on a call to action. Larry you have thrown out the challenge to this workshop to come out with a call to action in Canada. Thank you.

Fred Buchanan is speaking from the point of view of industrial engineering. He has been employed by Northern Telecom for the

Lillan Vine *continued*

past 26 years and has been Corporation and Industrial Engineering Manager since 1978; he introduced Northern Telecom to occupational ergonomics in 1979. He has been active in community work and as entertainment chairman for the Northern Telecom Chapter of the Telephone Pioneers of America. Fred, I invite you to challenge us.

Engineering perspective

Fred Buchanan

I am going to attempt to show you what Northern Telecom Canada has done towards resolving the RSI problem in many of our plants. I am going to make two other statements, both rather contentious; you may argue with them, but if you examine them closely, you will find they are true.

From a manufacturing and industrial engineering point of view, we are terrible workplace designers and process designers in respect to the human being who has to use those workplaces and those processes. Regardless of how widespread the RSI problem is in an organization or corporation, many of the senior executives will pay it no mind because they perceive it as a nuisance that adds nothing to bottom line impact.

Let me tell you what we have done at Northern Telecom to try to improve our problem. We decided on a strategy about eight years ago (the first four years bore no fruit) to combine our occupational ergonomics program into our engineering cost-improvement program so that whatever we did in terms of occupational ergonomics would show a type of savings. We felt that was the one way to get the attention of our senior executives.

One plant in Winnipeg Manitoba has a divisional general manager who is people-oriented and the cabinet group that he has built around him is very much the same way. Two-and-one half years ago, that particular plant manager phoned me and said "We have some major problems in this plant; we've got all kinds of carpal something or other, some teno something or other and tennis elbow and we don't know what's causing it. Can you come out and give us a hand?" When I got there I found that the bulk of the problem was the design of the workplaces. We, the manager and his cabinet, developed a strategy for that plant. He said "Great, what we want to do is get the message across to the engineering fraternity, to the purchasing fraternity, so that they don't go out and buy ridiculous things because the salesman comes into the building and says, "We have the most ergonomic chairs on the market and biomechanically designed hand tools are fairly cheap." When they

Fred Buchanan *continued*

are introduced into the workplace, they are not ergonomically or biomechanically designed at all; all they do is aggravate the problem."

Everybody looks at the hourly workers as the employees who do the most suffering and very rarely do we look at the office staff and management who often suffer, too. We thought that in that particular plant, we would give occupational ergonomics training to a cross-functional group.

We started out with 17 people on the first course; that included eight hourly employees, engineers, managers, some senior executives, and clerical staff within the office complex. When the training was completed, those people were set up as an ergonomics committee with a fairly large amount of power. They were told that if any employee within that complex had a problem of RSI, a backache, a shoulder ache, whatever, the employees would have three choices. The first choice was to tell the manager. The management team was instructed to send the person first to the medical department for assessment; then to the ergonomics committee who would look at the workplace, at the task and the way the person was performing it, to see if there was some logical reason for the pain and if it could be eliminated.

The second choice was to go directly to the medical departments, which would again forward the person to the committee. Thirdly, they could go directly to the ergonomics committee. It worked tremendously well because people now perceived that there was somebody paying a little attention to the aches and pains that come from poorly-designed work areas. We began to see a lot of radical changes in the design of the workplace in that factory. We have carried the experience to some of our other locations.

What did we train the people in? It involved training our engineering staff and all the others I described in occupational ergonomics. The course that I teach contains all of the design criteria for a person-task environment system. It contains some basic anatomy: the musculoskeletal system, how it functions; the advantage of the muscles when they are used as lever systems within the body; rotary and non-rotary components of forces that are generated during a repetitive type of operation.

The theory portion of the workshop is five days in length and concludes with a closed book examination that's sent to Chicago to the association that markets the course for Texas Tech University for marking. In the second week all of the participants work in the shop or the office that they chose as an area needing occupational ergonomics improvement.

Fred Buchanan *continued*

There they must identify all the occupational ergonomic problems that they can find. They have to recommend solutions to all of those problems. They have to define what type of bottom line impact those recommendations will have in terms of savings; they have to identify how much it's going to cost. All that must be done within five days. The total workshop takes ten days. I can assure you we haven't had a workshop that has failed yet. Most of the people participating are tremendously eager, much like the participants here. They find the work interesting and they come up with some unique solutions for redesigning of workplaces, many far removed from the conventional industrial or manufacturing engineering type of solution.

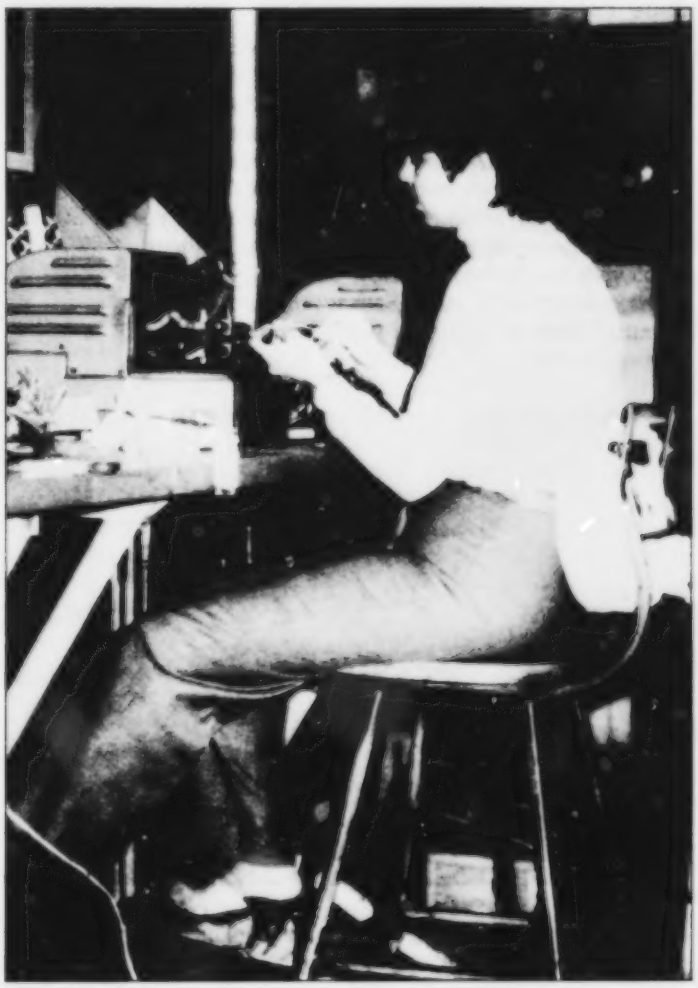
Slide 14

This gentleman can be described as a constant video display terminal user. He is parked in a corner without a good chair. The work situation is not conducive to doing a lot of good work but it is conducive to causing him back, arm and eye problems; the picture doesn't show it but there is a window directly behind him.

Slide 15

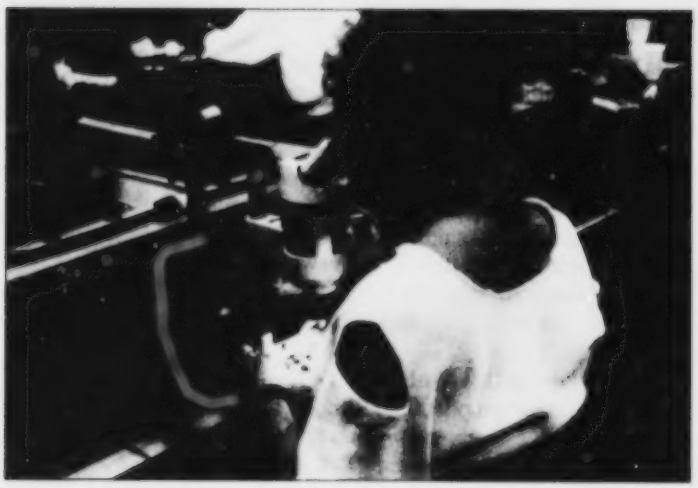
Here is another VDT user whose elbows are well below keyboard height, who doesn't have an adequate backrest on the chair and who seems to have her nose a little too close to the screen for proper viewing.

Slide 16



Another worker, in a Montreal plant, is sitting in a chair that I call circa 1902 with no footrest; when she does her task (we asked her to drop her elbows while we took the picture) she works most of the day with her elbows abducted so that the static muscle load on the shoulders and the upper arms is quite high and the fatigue factor is very high.

Slide 17

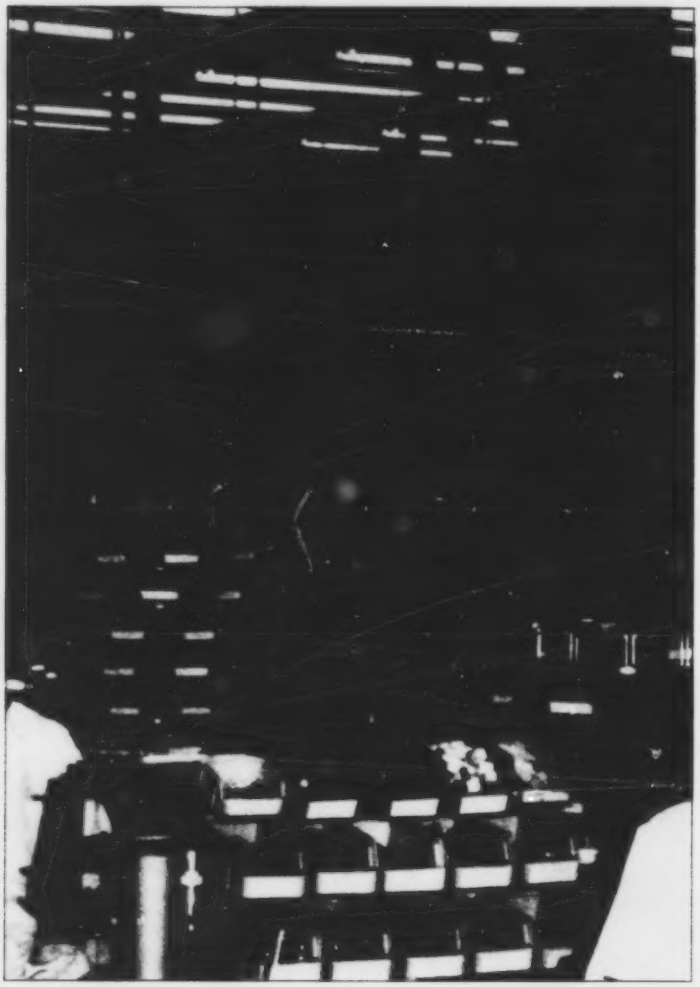


Dr Wells had a picture of a person using a microscope. This particular task causes that operator to hold her head absolutely still because if she lets the neck muscles move, it ruins the focus through the microscope and she can't see what's on the small ceramic chip.

Slide 18

The other part of the task has her holding the ceramic chip in mid-air with nothing to rest her arms on; she's required to do solder repairs under the same method with nothing supporting her head or the arm holding the chip and nothing supporting the soldering iron. The management team in that plant wondered why all of those workers who were roughly three grades higher than regular operators in the plant were asking for downgrades back to grade 1: the main reason was to get off the job.

Slide 19



A view of a typical circuit pack assembly workplace. Many things are wrong ergonomically with this type of workplace; one of the things we teach in the course is how to recognize what is wrong and how to correct it. For instance, as long as the operator has to reach into the uppermost bins, s/he will have a static load on the shoulders and the upper arms; if s/he can't see what's in those bins, s/he has to feel around until s/he finds and checks one.

In one of our small workshop presentations, the group described to senior management the existing workstation and the ergonomic workstation and what it was going to do. It started out with a study that set the old standard. The bottom line impact is the new standard of 1.185 hours per pack instead of the 1.3 hours per pack. The decrease in hours came from shortening the reaches to bins set

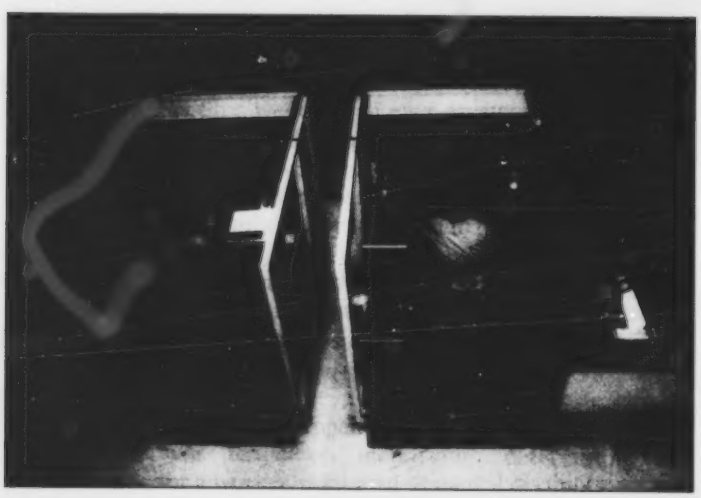
Fred Buchanan *continued*

at the back of 30-inch deep workstations which caused the operators a lot of static effort. The new standard also produced a distinct decrease in fatigue.

Here are the items they found wrong with the workstation: table tops weren't adjustable, the range of back adjustment on the chair was insufficient or non-existent, in addition to the normal problems in our workplaces and the way we design them; they examined all aspects extending to taking light readings to make sure they had adequate illumination for the task.

Here are the results that they found. In 100,000 packs per year manufactured which was about 11,500 hours saved and about $230,000, the implementation costs were about $136,000 so you had less than a year's payback. When we showed those slides to senior management, they said "How soon are you going to get on with the task?" The cost impact is what was convincing; had we tried to do those changes with that expenditure level with no bottom line impact, we would not have been successful.

Slide 20



In this design the operator has everything at hand, does not have to do any lifting, does not have any long sequences of repetitive motions that would cause a repetitive strain injury; it is a workplace that the operators helped to design, which is really keen, because they are the people who have to use it.

I agree with Larry Stoffman that you need employee involvement. You must have their input because they are the people that are hurting. They are the people you have to work with to solve problems. We at Northern are more interested in preventing RSIs than we are in curing them after they happen.

Lillian Vine

Already you see the call to action forming and you see the different views are much less different than you might have thought they were.

Dr. Raymond-Marie Dion completed his secondary school studies at the Saint-Jean Gagné College of the Jesuits in Quebec, and his university studies at Laval University's Faculty of Medicine (Quebec). He studied general surgery at Grace Hospital, Detroit, Michigan.

In 1981, he gave up his private practice in general surgery at the Outaouais Regional Hospital in Hull to become a consulting physician for the Hull regional office of the CSST, the Commission for Occupational Health and Safety. In 1982-83 he also directed the Gatineau Hospital's occupational services.

It gives me great pleasure to present Dr. Dion.

Compensation perspective

Raymond-Marie Dion

I was pleased to accept the invitation to participate in this workshop on occupational repetitive strain injuries.

I will present the situation as it is perceived and experienced in my milieu. The situation described is in accordance with the provisions of the new Act on workplace injuries and occupational illnesses in force in Quebec since August 1985. This Act replaced the old law on workplace accidents which dates back to 1931.

I would like to look at two specific problems:

- Recognition of the occupational origin of these illnesses;
- Compensation and rehabilitation.

There are two ways to obtain recognition of the occupational origin of an illness. Occupational repetitive strain injuries can generally be considered occupational illnesses. Some illnesses are specifically mentioned in Appendix I of the Act, for example, tendinitis, bursitis and tenosynovitis. These illnesses are considered characteristic of the work if the work involves repetitive movements and pressures over long periods of time. In such cases, there is no need for the worker to furnish proof that his illness is work-related. He must simply supply two documents:

- A medical report establishing the diagnosis;

Raymond-Marie Dion *continued*

- A work history.

If, after examination by the Commission, it is established that the work conditions correspond to the specifications laid out in Appendix I, the claim is accepted as an occupational illness.

However, when the worker is suffering from an illness not listed in Appendix I and not resulting from an occupational injury, but contracted at work, the worker's illness is considered occupational in nature only if s/he proves to the Commission that the illness is directly related to the risk inherent to the job. The burden of proof is reversed in this case.

It has been established by judicial precedent that a series of movements may constitute a sudden, unexpected occurrence and thus satisfy the definition of an occupational injury. Some injuries resulting from repetitive movements may therefore be recognized as work accidents rather than occupational illnesses.

Now let us look at and compare the forms of compensation. These are of two types, two eras if you will.

Under the old work injury act which was in force in Quebec from 1931 to 1985, as time went on, an ever-greater importance was attached to assessing any decrease in work capacity. According to this act, a decrease in work capacity was determined as much as possible according to the nature of the injury, but also by considering the worker's ability to return to the job at which s/he was injured or to adapt to some other appropriate occupation. The method by which permanent partial disability was to be calculated was the subject of much contention (permanent partial disability is the sum of the anatomophysiological deficit and the inability to return to work).

In short, at that time, the compensation plan administered by the Commission was based on identifying, determining and compensating for a worker's physical or mental disability, as well as for any loss of ability to return to work.

The new law on work injuries and occupational illnesses was passed in August 1985, bringing with it a major reform of workers' compensation.

In addition to an indemnity for physical injury, the worker is now entitled to salary replacement pay equal to 90% of net income (up to an insurable maximum of $36,500) until the injury is set, that is, healed or stabilized to such an extent that no improvement can be expected, or as long as the worker needs rehabilitation before

Raymond-Marie Dion *continued*

being able to return to the former occupation or another appropriate one.

In addition, the worker who is forced to take a different, lower-paying job as a result of the injury is entitled to compensation for the difference between the new salary and the salary s/he was receiving when injured.

Salary replacement pay is discontinued

1. when the worker returns to the former occupation,

2. when the worker dies,

3. at the worker's 68th birthday,

whichever occurs first.

Rather than paying monthly annuities for physical injury, the Commission now pays a lump sum of no less than $541 in the case of an anatomophysiological deficit. The lump sum payment may be as high as $54,132, for example in the case of a person aged 18 or under who has suffered 100% permanent damage. This permanent physical or mental damage includes any anatomophysiological deficit, damage to the appearance, and the resulting pain and decrease in the enjoyment of life.

Under the new law, indemnity for physical injury is based on the worker's age at the time of the injury rather than on salary. All workers of the same age who suffer an injury to the same part of the body, and the same after-effects, will therefore receive the same amount of compensation.

Right to return to work

The law also makes provision for a right to return to work: the victim of an occupational injury who is able to return to work is given priority to return to the occupation held at the time of injury, in the same establishment; s/he is also given priority for an equivalent job in the same establishment or in another establishment belonging to the same employer.

The worker who is absent from work because of an occupational injury continues to accumulate seniority and participate in the other benefits.

The right to return to work can be exercised for up to a year after the start of the injured worker's period of continual absence if the

Raymond-Marie Dion *continued*

company has up to 20 employees. If there are over 20 employees, this right can be exercised for up to two years.

Right to rehabilitation

The new law also makes provision for rehabilitation.

The worker who suffers permanent physical or mental damage because of an occupational injury is entitled to the rehabilitation necessary for social and professional reintegration.

Together with the worker, the Commission prepares and implements a personalized rehabilitation plan which may include physical, social and professional rehabilitation, according to the worker's needs.

Physical rehabilitation may include nursing and medical care, physiotherapy and occupational therapy, and exercises to facilitate adaptation to a prosthesis or orthesis.

Social rehabilitation may include professional psychosocial services, providing the worker with a home and vehicle suitable for his/her residual capacity, paying expenses incurred for personal care at home, as well as child care and routine housekeeping expenses.

Professional rehabilitation may include a retraining program; job aptitude evaluation services and professional training; job search support services and a subsidy to employers to encourage them to hire workers suffering from permanent physical or mental disability; work station design; payment of expenses incurred when exploring a new job market or moving to a new work location; granting funds to a worker to set up and direct his/her own company if this provides suitable employment and if the injury prevents him/her from returning to the former occupation. The Commission will meet the cost of the most economical solution. The Commission provides the professional services for personalized rehabilitation plans, or refers workers to the appropriate individuals or services.

To summarize, the new law encourages, if not ensures, an adequate and equitable compensation of occupational injuries, by providing for compensation for physical injury, and salary replacement pay; and by granting injured workers two fundamental rights, the right to return to work and the right to rehabilitation.

The chances of successful reintegration to productive, remunerative employment are greatly increased when both parties are motivated.

Lillian Vine

I thank Dr Dion for bringing us a picture of compensation in Quebec which has changed radically in the past two to three years. It emphasizes the goal of compensation not only to compensate but to ensure return to work which is satisfying and productive.

Our next speaker is Dr Lisa Doupe of General Motors of Canada. Dr Doupe has an MD degree and a diploma in Industrial Health from the University of Toronto. She is a Fellow of the American Occupational Medical Association, and has worked at General Motors in several different capacities and previously at Imperial Oil Limited. She is active and very involved in several professional societies—she is the Chairman of the Occupational Health Section for Durham Region District Health Council, Secretary of the Toronto Academy of Medicine Occupational Health Section, and Chairman of the Second Wednesday Club for Occupational Health Physicians.

Lisa will focus on the training physicians receive, how occupational medicine fits into the whole picture of occupational health, and how it's changed. Lisa, we look forward to hearing your views.

Medical perspective

Lisa Doupe

I have been asked to outline the concerns that I, as an occupational health physician, feel should be addressed. I want to give you my understanding of what occupational medicine is and suggest some issues for you to reflect upon and discuss during the workshops. A primary dilemma which needs to be examined is that there are two co-existing philosophies in this field. One philosophy is that of the traditional band-aid approach; it could be seen as being outmoded and static. The second philosophy is that of the trained occupational health physician whose orientation is towards prevention, wellness and rehabilitation. This approach has already been shown to be effective and has potential to meet the needs of the changes within industry.

What is occupational health? The World Health Organization and the International Labour Organization define occupational health as the prevention of injuries and illness in the workplace. Programs which might be included in this are ergonomics, hearing conservation and hazardous materials. Occupational health deals with the rehabilitation of the injured worker—getting the injured worker back into the workplace. Whether the injuries are musculoskeletal or whether they are illnesses such as alcohol or drug abuse, in-house physiotherapy and counselling can address these problems. Lastly, it deals with varied health promotion

Lisa Doupe *continued*

programs such as fitness centres, smoking cessation, diet workshops, hypertension screening, in-house Alcoholics Anonymous groups, Narcotic Anonymous groups and even Emotions Anonymous groups. All these programs help to establish opportunity for employees to maximize their health.

Occupational health programs not only focus on the individual but on the culture of the organization. Smoking policies in the workplace and nutrition in the cafeterias are examples of the influence of this new type of occupational health professional.

The success of occupational health programs depends not only on gaining management's recognition of the problem but also gaining its commitment to our programs. The success of occupational health programs also depends on the union's understanding of what we, as occupational health professionals, are trying to do. It is crucial therefore that management and union understand the purpose of the programs and support them, for without their support, our programs will fail.

Unlike other physicians, our role is only to make recommendations to the management group. As an occupational health physician, I see myself as a professional working outside the labour/management relationship as a third party, but responsible to my patients whether salaried or hourly. I feel I've maintained this independent position by not working on salary.

Training for the occupational health physician is at a post-graduate level. A diploma or Master's in occupational health may be achieved at the University of Toronto or McMaster University. But ergonomics is one topic which is poorly served; it is an option at the University of Toronto, and at McMaster it is only an eight-hour course in the three-month program. Most of the education one gains in this discipline is from post-institutional conferences such as the annual American Occupational Medical Association Conference. While the basic tenets of medicine were developed by Hippocrates, it wasn't until 1713 that the history of modern occupational medicine begins. Ramazzini, an Italian physician, recommended that all physicians ask each of their patients what their job was. The first repetitive strain injury was described by legal clerks in the 1830s, yet the discipline of ergonomics was not born until World War II. Unfortunately, as we saw with the repetitive strain injuries in those long-ago legal clerks, the recognition of a health problem does not always mean resolution.

For physicians working in the automobile industry, repetitive strains are the major problem and account for 65% of injuries. These are defined as ergonomic-related injuries; it is probably

Lisa Doupe *continued*

upward to 95-100% if one wants to look at the broader definition. When we analyzed the functional unit, the arm accounts for 41% and the back accounts for 25%; one of the issues we might discuss in this workshop is the functional unit versus the anatomical units.

In 1984, at the General Motors truck assembly plant, which has 3,000 workers, the cost was approximately $400,000. As an occupational health physician though, my concern for the cost and the size of the problem is secondary to my concern at seeing young men and women with low seniority becoming disabled. The effect of being disabled has wide-ranging implications and beyond the financial: the severe social and psychological problems, the pain and suffering, not being at work and the consequent loss of identity that is the reason for my interest in promoting and implementing preventive programs.

The truck plant where I work, which was to be rebuilt, provided the ideal opportunity to try some innovative ideas and to gain the commitment of not only management but also of the engineers to implement new concepts. We have stop and go; we have automated guided vehicle systems which permit the raising and lowering of the jobs to meet the height of the worker. The transmission plant in Windsor, where I also work, was already built; it forced us to develop several systems of identifying jobs causing injury as they were happening. During the workshop, I want to discuss the various systems we developed to recognize these injuries and to develop a process which could prevent them.

In looking at the role of the medical profession in industry, it is important to distinguish between the family physician and the specialist and the trained occupational health physician. I do not include in the latter those physicians who work in occupational health who are not trained in occupational health; often they see injuries as something to be treated rather than prevented. This band-aid approach only deals with the symptoms, not the cause. This attitude, I feel, is partially responsible for the number of repetitive strain injuries which we see today.

The family physician and the specialist see the responsibility of repetitive strain injuries as a responsibility of the workplace. They do not understand the lack of apparent recognition by management that a problem exists and the lack of commitment by management to change the jobs in the workplace. More importantly, they don't see a bridge between themselves and the relevant person in industry; in frustration, they continue their own treatment-orientated approach. Those trained in prevention and in industry need to be given a greater opportunity to engage in dialogue with the physicians within the community. As an occupational health

Lisa Doupe *continued*

physician oriented to a preventive philosophy, I see the ideal approach to controlling these injuries at the design stage of a plant. Once production has begun, the chances of making major changes are small. A system to recognize the need for change and to make changes must be developed if we are to reduce the number of repetitive strain injuries. Recent surveys have identified that 80% of ergonomic fixes cost less than $1,000. In my experience, this is true—implementation costs are minimal.

I was glad to note that Larry talked about the loop of injury, (physician) healing and return to the job. This loop gives us an opportunity to intervene as soon as someone is injured, whether it's just from a visit to first aid or a compensation claim. If we can look upon that as an opportunity to get our ergonomic committees to look at the jobs, then we can hope to reduce the number of repetitive strain injuries.

To the occupational health physician, surgery represents a failure, but it is unrealistic to think that we can prevent all repetitive strain injuries. Timely rehabilitation must become a priority of management and of the compensation system. Programs must consist of: treatment for the acute injury, education and a strengthening of body mechanics so that individuals will not re-injure themselves once they return to the job.

In-house rehabilitation is a relatively new phenomenon in Ontario. Dofasco had the first physiotherapist in industry, and that started in 1967; as far as I know, only four companies employ a physiotherapist within Ontario. We have just begun with one at General Motors in Windsor. I have found it to be very successful in returning people to work and in preventing injuries because of feedback from the physiotherapist to the ergonomic committee. Fitness programs in industry may help to reduce the number of injuries by encouraging a generalized improvement in overall fitness.

What we have to look at now is the reality that the occupational health physician's approach is one that can link the injuries to the job. There is a disturbing trend throughout occupational health. Recognition of factors contributing to ill health has not always meant corrective action. We knew scurvy would be prevented by adding lemons to the diet of British sailors in the 1600s. This was not made mandatory for 250 years. We knew that asbestos caused cancer in 1901 and yet, in Ontario, nothing was really done about it until the late 1970s.

We need to address the basic concept of the role of the medical profession. Then the secondary questions within the framework

Lisa Doupe *continued*

can be examined: "What is to be done?" "Who is to do it?" "How is it to be done?" When we have resolved these, we'll have succeeded in coming to terms with the problem of repetitive strain injuries.

Lillian Vine

The time is now yours for questions and comments before you go to work groups.

Chairing the workshop sessions are Serge Trudel, Jean-Marie Gonthier, Bruce Waechter, Peter Edmonds, Garth Dee and John Aird. The group that Jean-Marie Gonthier is chairing will function in French; simultaneous interpretation will be available if it's required.

Questions

Serge Fortin
Le Syndicat des travailleurs et travailleuses en communication et électricité du Canada (STCC), Local 522

I was listening to Dr Dion's speech a few minutes ago and it seemed to me to paint quite a true-to-life picture of the laws. But I was wondering whether there may be two Quebecs in Canada, because in the Quebec where I live, the law doesn't work that way; there are constantly disputes about all sorts of things—returns to work, people always unhappy about something.

Raymond-Marie Dion

I do not want to get involved in an argument. I set out the text of the law purely and simply, as it is understood by Quebec legislators.

Marie Pinsonneault
Le Syndicat des travailleurs et travailleuses en communication et électricité du Canada (STCC)-CTC-FTQ

People think we in Quebec have the best laws; Dr Dion gave an excellent presentation. It's all very nice in theory, but in practice, let me say that the new law is creating a hellish situation in Quebec right now. I don't want to give you all sorts of case histories, but I think it is very important not to mislead people into believing that in Quebec we have the best laws that work well.

Lillian Vine

I take it that was a comment and does not call for an answer. Dr Dion explained what the laws were; what you are saying is that making a law is one thing but making it work is another. That is what you are going to be looking at during this workshop—how do you make things work? How do you make things better?

Pete Turnau
British Columbia Telephone Company

Larry, I'm interested in the problems you're having with the WCB assumption that if you've been with a job for a long time, you cannot get an injury from it.

Larry Stoffman

Compensation board policies in BC and in most of the provinces are based on information that, if not erroneous, is certainly incomplete. A great many claims are turned down on the basis that there isn't enough occupational health evidence or research to indicate that a repetitive motion injury or an overuse injury can be produced by just that overuse or repetitive motion. I certainly can neither explain nor defend that logic. I spend a good deal of my time arguing with board medical advisors, appeal boards, commissioners or ministers of labour about the inanity of that kind of policy. Some of it has to do with cost cutting measures by compensation boards. They are concerned about opening the floodgates to claims.

I heard that put forward quite eloquently by the head of the compensation system in the State of California at a conference about a year ago. Many states have moved ahead to the point where they have to admit that a lot of problems, whether back injury or repetitive strain injury to another part of the body, are often caused by repetitive work using hazardous motions often unavoidable given the work environment. If boards accepted all of them, they would go broke. For that reason, a lot of people looked at universal disability schemes rather than strictly workers' compensation schemes.

In the last five years or so, there's been a great deal of research in epidemiology carried out elsewhere, that I think would indicate that the vast majority of these claims are work-related; they ought to be accepted and they're not. The situation we are in now in British Columbia is that we have to re-invent the wheel every time somebody puts in a claim and go through pages of documentation to show that 5,000 forceful exertions of full extensions of the wrist might be causative of a tenosynovitis or carpal tunnel syndrome. The response is "They've been doing it for 30 years and they

Larry Stoffman *continued*

weren't injured—if they were going to be injured, they would have gotten injured 30 years ago."

Pete Turnau

In your experience, would you say that that's not necessarily true?

Larry Stoffman

Of course it's not true. Our direct experience with retail food workers is that those who have worked full-time (rather than part-time) for two or three years, have a greater exposure to certain bio-mechanical hazards or repetitive motions; and they have at least three to five times' higher incident rates of this kind of injury. A common-sense interpretation would be that one is linked to the other—but it has yet to sway some of our learned friends at the compensation boards.

Jim Crocker
Canadian Automobile Workers, Local 1520

I'm interested in the duration of exposure to repetitive strain injuries; it's a problem in adjudication of compensation injuries and claims. Some workers have a very short exposure to a particular situation and end up with a repetitive strain injury and others could be on the same job for a couple of years before it actually develops into a problem. Are any standards being developed or are there any guidelines for adjudications for the various compensation boards on the duration or the exposure to a particular repetitive movement before a disease manifests itself?

Richard Wells

I was listening to a call-in program in the United States and that was probably the most common question asked—what is the relationship and can we formulate some sort of standards? From my research, no such standards seem to exist—that was the problem of dose response. In addition, because of the different relationships between the person doing the job, the workstation and people's inherent differences in anthropometry, strength and other coexisting problems, it doesn't seem feasible that the types of standards that you referred to will be available.

Fred Buchanan

I would tend to agree with Dr Wells. There are physiological differences between people so you can't really have a standard that dictates how a workplace should be designed to reduce

Fred Buchannan *continued*

repetitive strain injuries. We can recognize that repetitive strain injuries are going to occur; we can try to minimize the frequency with which we ask a person to do a task by getting jobs to be multi-functional and by varying tasks so that the cumulative trauma effect does not result in a repetitive strain injury.

Lorne Lean
General Motors of Canada Limited

I'm particularly interested in the job rotation portion of your speech. How does your union see that?

Larry Stoffman

I was referring to proposals made by the United Fishermen Allied Workers Union in British Columbia to have some job rotation with fish-washing machines. I couldn't tell you how they dealt with it. From what I do know, it was a simple request to have a lower level of exposure to the very rapid work rate on a particular machine; one way of doing that was to ensure that a person is not stuck on the same machine all day. The way in which you organize that kind of rotation can become fairly sophisticated and you have to work out the problems associated with spreading the problem around.

Enzo Mancuso
Canadian Automobile Workers, Airline Division

My question is for Fred Buchanan. I always find it sad and frustrating that higher management always puts a dollar figure on a worker's health. I have the same problem in trying to convince my employer to fix some of the problems that we have in the workplace. Fred, when you were called into Winnipeg, did you consult a joint health and safety committee or were they involved? Are there any joint committees in that workplace?

Fred Buchanan

In that particular plant, there is no union. Our London, Ontario plant is a CAW plant, both shop and office. A year-and-a-half ago it probably had the worst repetitive strain injury index of any of our 22 locations in Canada. Obviously, something had to be done. The safety committee of union and management realized that. I was asked to help.

I did an ergonomics audit of their whole plant and gave them about 12 to 14 pages of items that needed correcting. At that point it became clear that maybe they should get their own instructor and

Fred Buchanan *continued*

start training their own workforce about what to look for and how to correct it. We did have a fair amount of dialogue with the union/management safety committee.

Lillian Vine

It is time for the workshop groups. Have very good discussions.

Plenary Session – The Way Forward
Reports from Homogeneous Workshops

Lillian Vine

Sitting at the table with me is the reaction panel who will listen to the reports of the three homogeneous groups and react from the points of view of labour, management, government and compensation boards.

David Bennett is sitting in for CLC Executive Vice-President Dick Martin who is unable to be here because of an urgent meeting of the CLC Executive today. David Bennett is the National Representative of Workplace Health and Safety of the Canadian Labour Congress. Under the direction of Dick Martin, he is responsible for all workplace occupational health and safety matters including policy advice, research and writing of position papers, and contacts with the federal government, the business community, and the international agencies. He is a Governor of the Canadian Centre for Occupational Health and Safety as is Dick Martin, and a member of its Executive Board. He was chief union negotiator in the WHMIS (Workplace Hazardous Materials Information System) project. He has written and taught many courses. David holds an MA in philosophy from Cambridge University and a PhD from McGill University.

To his right is Patricia Wellman, Director of the newly-created Operational Policy Development Branch of the Policy and Specialized Services Division at the Workers' Compensation Board of Ontario. Patricia Wellman is a lawyer and earned her Law Degree from Osgoode Hall in 1984 and specialized in the area of Labour and Employment law. Since her call to the Ontario Board, she has worked in three separate capacities at the WCB as Legal Counsel in the Review Services Division, solicitor in the General Counsel area and, since May 1987, in the new Policy Development Branch. The Operational Policy Branch in the newly re-organized Board structure is a centralized policy function which will develop and review current and new policies in the increasingly complex world of work.

Franz Reiterer holds a Master's degree in Process Engineering from Austria. He immigrated to Canada from Austria in 1985 to head a new metal-finishing plant for Magna International, North America's largest manufacturer of automotive components. He was appointed General Manager in charge of the start-up operation. In May 1985, he was asked to join Magna's Corporate Employee Relations department. Today he heads the Employee Relations function for the Magna Corporation which consists of four group offices and approximately 120 operating facilities throughout Canada and the US.

Bill Rozel is another Governor of the Centre. That is not why Dick Martin or Bill Rozel were asked to be on this panel; their names

Lillian Vine *continued*

were suggested by the requesters of this workshop; it is a happy coincidence that both sit on our Council of Governors.

Bill is a native of Orillia Ontario. He received his Bachelor of Science degree from the University of Toronto and his MBA from McMaster University in Hamilton. Before moving to Alberta in 1975, he was a district plant manager of Public Works Canada in Toronto. In 1979, he was appointed Executive Director of Work Site Services, Alberta Occupational Health and Safety Division with responsibility for the administration of four branches, Engineering, Special Services and two Inspection Branches, with a total staff of 105. Prior to joining the Division, he spent two years as Executive Coordinator of General Safety Services, Alberta Labour.

This panel will react to the reports of the labour, management and professionals group. We are pleased that Martin O'Connell, the Chairman of our Council of Governors, has now joined us.

The first group to report is the professional group; reporting is John Aird.

Report of professionals

John Aird

One of the things that struck us as we came together as a group was the similarity in the discussions that took place in each of the six workshops.

Informational and Awareness Needs

The first area we looked at was informational needs, which were felt to overlap with the need for greater awareness of the problem of RSI. We lumped these two areas together. The informational and awareness needs can be divided into three areas: the informational gaps, information distribution and access problems, and information about the cost of the problem.

Information Gaps

We need better information on the cause/effect relationship, the contribution of non-occupational factors (including personal); and we need a national survey or study to get some indication of the prevalence of the RSI problem. Such information could be used by the WCBs to more effectively handle claims. It would also be valuable to employers, professionals and labour to identify

John Aird *continued*

problems more effectively before they become lost time problems. The national survey would help to heighten awareness of the various groups to the magnitude of this problem.

The lack of information about the prevalence of the problem to a large degree reflects the quality of the information currently being reported. Research groups and the Workers' Compensation Boards should be involved in filling these informational gaps. A serious problem was felt to be the lack of a central or national body responsible for such research initiatives, similar to that found in other countries such as Sweden.

Information Access and Distribution Problems

The second area of information and awareness problems lies in access or distribution of the information. There is a lot of information about RSI and how to prevent it; but it is not getting to the people who need the information, or else people don't know how to get to the information. This is contributing to the lack of awareness at all levels. The practitioners who are trying to address the problem also need better access to the technical information that would help them.

The information about RSI is needed at a number of levels. At the facility level by both employees and management. There was strong agreement that the joint health and safety committee or an ergonomics committee should play a strong role in educating employees and management. The information is also needed in the schools and colleges that train the practitioners, including physicians and engineers, to provide these professions with a better appreciation of the problem and their role in preventing RSI. National and provincial bodies that could disseminate such information might include the compensation boards and safety associations on a provincial level, and the Canadian Medical Association and the Canadian Centre on a national level.

Cost of the Problem

There is an important need for information about the financial cost of the problem to help raise management's awareness and concern for RSI. Additional information motivating management to reduce RSI should focus on how reducing such problems can improve morale, increase production, and improve the quality of working life. The possibility of regulations being required to motivate management to action was suggested, but it was hoped by many that this could be avoided.

John Aird *continued*

Prevention of RSI

A number of suggestions or ideas for prevention were thought important. Ergonomics committees can play a valuable role; we felt that they would be most effective if separate from the joint health and safety committee, perhaps as a subcommittee. Employee input and involvement in the prevention programs was felt to be very important for them to be successful. Training of workers and management in the specific skills required to safely do the job, and to be able to spot and solve problems was felt to be very important. Engineers and other practitioners, too, must be specifically trained to identify problems and develop solutions.

Job task analyses are an important component in an RSI prevention strategy. The job factors that might contribute to RSI must be identified, preferably before injuries start happening, and the appropriate corrective action taken. Such audit programs should include a monitoring of incident rates, in addition to assessing the job demands and work processes. Closely aligned to the monitoring of incidents was the early identification of symptoms in workers to try to catch problems before they become lost-time injuries. A more effective incident reporting system is needed to collect more meaningful information about RSI.

Other suggestions that were felt by some members of the group to be effective in certain situations included changes in job rotation and job reorganization. There was a lack of agreement as to the value of medical screening or preplacement assessments and the need for all such programs to comply with human rights considerations was strongly noted. Fitness improvement and conditioning programs were also suggested by some participants as part of an overall prevention strategy.

The issue of performance monitoring and incentive programs and the pressures they put on people need to be examined. Some suggested the removal of incentive or electronic monitoring programs would reduce workload pressures felt to be contributing to RSI, but that wasn't the position of everyone.

The group concluded that the strategies to correct RSI problems should be put into an order of priority. One proposal that was widely accepted was that the priority should be to first consider engineering, workplace design or job design approaches, and then administrative controls such as job rotation, rescheduling, training, fitness and conditioning, and then rehabilitation and return to work programs. Rehabilitation programs, while not primarily preventive in nature, were included because they have been shown effective in cutting down on the recurrence of injuries.

John Aird *continued*

A concern was raised about the emphasis of some of the prevention strategy proposals on identifying problems through incident reporting and medical surveillance programs. It was noted that such information does not prevent the problem, but provides valuable direction as to the need to implement appropriate prevention strategies.

Problems in Reporting

There were felt to be a lot of problems with the existing reporting system. There is a philosophical difference between trying to reduce lost-time injuries and having to report all lost-time injuries from a cost standpoint. A lot of incentives, including financial rewards, are built into the existing system for not reporting injuries. It is a very complex issue.

There is need for early reporting of symptoms. Under the current system, a person often has a compensable injury before anything is heard about it. There is a need to capture symptom information and to link it with the job. The system of incident reporting (Form 7—WCB) is based on the traditional accident-type situation related to a specific incident. These forms must better reflect the types of information that need to be collected for RSI.

Supervisors need to be trained to complete the incident reports for completeness and quality of information.

Regulation

We didn't talk a lot about regulation; if all else fails, it might be required to heighten awareness and to move people to action. Our group hoped that regulation would not be necessary. General or broad provisions requiring people to look at certain things without nailing them down too specifically might be acceptable, but such regulations would be difficult to enforce.

There was an identified need for improvements in equipment and tool design from a supplier production standpoint. The group was not sure if regulation was the best way to influence manufacturers; better design guidelines or standards might be a preferred alternative.

One suggestion put forward would be to develop a national work environment code or standard similar to that found in some other countries such as Sweden. This "code of practice" could provide guidance to manufacturers and workplaces alike.

John Aird *continued*

Compensation System Concerns

It was felt that there was a need for better practitioner education in the process, because not all practitioners are as well educated on some of the issues related to RSI as they might be. Problems are seen in the red tape for physicians' payments. Physicians are put in a rather awkward, adversarial role in which they are mediating between the employee, the company and the WCB. It was suggested by one member of the group that the joint health and safety committee should be more actively involved in the review of claims.

A clear need for the WCB to establish clear policies relating to RSI was identified, particularly on the issue of those injuries which are related to "too much too long." The emphasis in the current system seems to be on a change in the work process which precipitated the injury, rather than the recognition that RSI can develop over a long period of time.

The group also identified a need to improve the adjudication process. Suggested as part of the problem with the process may be a lack of skills in adjudicating RSI claims, which results in inconsistency. A possible solution would be to route all claims to those adjudicators with extra training or expertise in RSI so they could better interpret the information.

Rehabilitation and Treatment

In the rehabilitation and treatment area, an information gap was noted. There is a need for information on the nature of the work and the workplace, particularly that information getting to the attending physician. We had no specific solution as to how this could be done, but agreed that a mechanism is required to capture information related to the nature of the work and the demands of the workplace, and to get such information incorporated into rehabilitation and treatment decisions.

Concern was expressed about the company doctor's relationship between the patient and the Board and the employer. One proposal was having community-based worker health and safety clinics to provide expert advice. There was a general consensus that there is a need for prompt treatment and early return to meaningful work to avoid the disabling psycho-social problems of a long time off the job.

Concluding Remarks

Two days are such a short time frame to discuss such a wide range of issues. The groups tended to identify problems and shortcomings

John Aird *continued*

in the existing situation, but we were unable to adequately flesh out the solutions—where to go from here or who should be involved. One suggestion was that a national commission or task force should be established to look at these issues, and publish a report providing clear directions on where we should be going and what we should be doing. Counter points of view were: "Are we studying the problem to death? Why can't we just get on with it?" We were not able to resolve where to go from here, though both alternatives have their merits.

Laurie Fraser
Consultant, Province of Alberta

It is very important that we as professionals become clear that auditing and monitoring are not a prevention strategy of itself but only a starting point. We have to understand the problem and then target effective prevention programs.

Lillian Vine

Next to report is the labour group.

Report of labour

Jean-Marie Gonthier

I will present part of a report which my colleague, Serge Trudel, will complete.

In the labour group we discussed three points: reporting the injury, compensation, and rehabilitation. After I have reported on these three points, Serge will discuss regulations and prevention.

On such, our group decided that we need a better system, perhaps even a national system to standardize compensation procedures from one province to the other; a system which would allow workers the freedom to truly describe their job—the movements and strains they are exposed to during their work—to explain clearly what happened to them. To this end, an improved formula was suggested which would take into consideration the impossibility of giving a specific date for the occurrence of an injury caused by microtrauma due to repetitive strains or movements. This reporting system, or the form, would have to allow the victim to report the injury and explain the appearance and development of the symptoms.

Workers should be encouraged to report each incidence of musculoskeletal problems to the First Aid Service. When the

Jean-Marie Gonthier *continued*

worker's problem becomes so acute that s/he must take time off work, the reports submitted regularly to the First Aid Service can be used to prove that the injury occurred progressively. To avoid having this information used as proof of the personal nature of their injuries, workers should make a point of indicating that their ill health is a result of the movements made in the course of their employment.

In this reporting system, the information recorded on the forms could be used for two purposes, first, to determine the amount of compensation and, second, for prevention purposes, to prevent relapses and correct working conditions so other workers will not sustain the same type of injury.

We also recommend that the information be circulated between the various organizations or agencies responsible for enforcing the laws and regulations. Some even suggested that supplementary forms be used to provide more complete information; and that all reports be sent to the Workmen's Compensation Board to prevent any camouflage and especially to prevent someone at the plant from deciding whether the problem should be treated as a work injury or as a case to refer to the group insurance plan.

Regarding compensation, there was a strong feeling that those responsible for applying the law in the different Worker's Compensation Boards should be better trained and more informed on injuries resulting from repetitive strain; that they should show a better understanding of the problems and make sure they have all the information necessary to reach the right decision, such as the worker's job description.

We discussed the possibility of resorting to official rulings, but were not able to reach complete agreement. In Quebec legislation, there is an order stipulating that where there is both an illness and a job which could cause this illness, there is presumption. This is what the law says, but it is not always applied. And we have many criticisms to make of the Board in this area. That is why we all agree that WCB employees should be better trained and the law applied with a more open mind and a better understanding of the problems.

There should also be a better definition in the law or regulations of microtrauma produced by work-related repetitive movements or strains. Right now, the various descriptions do not always agree.

Of course, there should also be a compensation system which works well and compensates victims quickly without directing them toward group insurance plans. Some members of our group

Jean-Marie Gonthier *continued*

denounced a certain sexist attitude by which men are compensated for a given injury sustained in the course of their occupation, while women working in the same place and carrying out the same duties are not entitled to compensation, for rather obscure reasons. We do not really know the extent of this problem, but it was mentioned.

Personalized rehabilitation plans were recommended which would be accessible to everyone without restriction. Job modification was also recommended, to prevent relapses. We believe that rehabilitation plans should include the right to return to work or to the labour market.

This completes my part of the report. I will now pass the microphone to Serge Trudel.

Serge Trudel

My report is in two parts. The first is on prevention. Our group recommends prevention programs, that is, an organized approach to identify the problem and find solutions. This involves studying the various jobs and related duties, providing regular updates, and finding solutions and ensuring that the committee participates in each of these steps.

We deplore the lack of employer awareness of the prevention problem. Management must be aware of the problem and, particularly, acknowledge that trade union or worker involvement in prevention is important and not just acceptable. For after all, those who do the work are in the best position to provide information on the problem and suggest solutions.

If we want an effective program where real changes are brought about, the presence, involvement and support of top management is extremely important. Cost must be considered, as well as the different activities necessary to bring about changes; without the whole-hearted support of top management this can be very difficult. There is no ideal way of inducing top management to participate other than by emphasizing the trade's troubles in such matters as cost, industrial relations, the right to refuse dangerous work, hiring an inspector.

There was a consensus on the need for job classification; from the moment job design is first considered, the needs related to repetitive strains should be taken into account. This is really the way to ensure that our efforts in prevention will be most successful. It is easier to introduce changes early on when they are relatively cheap to implement than at a later stage when the equipment is already in place; by then, the cost is tremendous.

Serge Trudel *continued*

The workers themselves must have some input into the workplace design effort. There ought to be a multidisciplinary involvement of all those with an interest in job design and the means of production.

A consensus was also reached in the area of education. Everyone is for education; the problem arises when there is discussion of the exact type of education. Our opinion on education, from a trade union point of view, is that workers should be informed about repetitive movements carpal tunnel syndrome, etc. And, they ought to be taught to identify and correct these problems—this is the ergonomic approach; education should not consist of being taught about physical fitness and which movements are the least dangerous.

There was some discussion on administrative control measures, or job rotation. As trade union representatives we would recommend rest periods or reduced work time as an alternative. Rotation simply spreads the problem around!

We also recommend eliminating bonuses and electronic monitoring of production or activities. Work tasks in themselves create enough problems without additional stress of this kind.

On regulations, we discussed three items. One is a national standard; like training, everybody is for it but there are a few problems. There is a feeling that without standards we won't be able to achieve any improvements at this stage. Standards could be a tool to focus our attention on more specific needs. Standards for manufacturers would get them to offer equipment that deals with ergonomic concerns. The Canadian Standards Association could propose guidelines on an approach to repetitive movement and strain; and general and workplace-specific standards.

The second aspect is the ongoing question of enforcing regulations. If a standard is too general or too specific, it will be difficult to enforce. Too general, nobody knows what it means; too specific, it doesn't apply easily to all workplaces. Maybe a consensus on enforcing or enforceability is needed; the joint health and safety committee should be the main player in addressing the problem, and on requiring outside help or enforcing agency.

Should we have some form of TLVs for repetitive movement, number of strokes or other limits? That is a difficult issue on which there was no consensus in either the tripartite or the labour groups. The complexity of the problem is that strokes or number of repetitions are a concern but not the only concern. Force applied, static load, control of pace, and position are also involved in addressing a desirable level for repetitive movement.

Serge Trudel *continued*

There is insufficient information on the relation between cause and effect or dose response; more work is needed. An approach through threshold limits value would raise a lot of problems. For example if one looked at the maximum weight to lift; that gets into problems such as woman or man, size of box, type of work done at the workplace, influence, the maximum or minimum weight. Workplaces vary from one worksite to another; threshold limit might be useful but it is difficult to have one that would apply everywhere. More thought is needed on that subject before we come up with any valid limit.

Report of management

Lillian Vine

Last but not least the management group.

Vanessa Mark
Ministry of Labour

Our group discussed information and awareness combined. We looked at information needs. Even if the information is available, how do you make people aware that it's there?

There is an information need about cost-effective ways of dealing with RSIs. We support the concept of a study of the Canadian experience which would provide more definitive information about the problem. We think there is a need for centralized data, statistics, better information about how much information there really is, a method of tapping into information pools such as the kind of materials that we have had for this workshop. We need to get a handle on the extent of the problem, especially if RSIs are under-reported.

We want to stress that we do know enough now to be getting started doing something. We cannot get a global approach overnight but a pro-active approach can be taken on an individual basis; things could be done at a basic level through ergonomics committees and just general education of managers.

People who are at this workshop and similar workshops are already committed; the difficulty is in getting to smaller firms who have neither the resources nor the time to attend. Business associations should make their memberships aware of the problems and get them involved.

Cost-benefit analysis should help gain the commitment of upper management. Core information on ergonomics should be part of engineering courses and part of business courses. It was very

Vanessa Mark *continued*

helpful to hear success stories about changes that helped individual companies in general and from a cost perspective.

Pete Turnau

We want to know when, how and where the injury took place, and what caused it. With that information, we can do a decent diagnosis of everything we are trying to accomplish...From our experience at BC Telephone, we found that the details were not clear—we're going after non-specifics. For example, a worker with a sore arm—What was he doing? How was he doing it? What time was he doing it? Are we reporting it correctly? That is the information we do not have and that is the information that we want.

The WCB form 7 is specific to a broken arm or a broken leg, but we don't have any specifics for repetitive strain injuries. We need something that's common across the country and that's the form 7. I understand we have different procedures across the country; they should be standardized.

What kind of format do we have for our reporting procedures for form 7 as well as for ourselves? We are all in different industries—what may be applicable to one may not be applicable to another. We must have something standardized and more accurate in our own companies. It was a general consensus of the management group that there was not enough accurate specific information.

Task forces are great as long as everybody has a common goal. It's got to be a team effort—without the team effort, you're not going to get anywhere. You can't say it's their job to start it first; you have to start it. It doesn't have to be a big job, a million dollar job; it could be $50, $60 or $100. Once you start making changes your workforce will say "these guys aren't full of it—they can give us some help here."

Prevention—what are we going to do? The really important question is when? And the answer is right now. Every one of us knows of a problem in our area; we can bug others for answers, but we can't wait for paperwork, we can't wait for decisions from others. We have our own companies to work with, our own people to work with—that's who has to do it. Everybody has to be involved: the management, the workers, the health services people, the engineers, and the professional people in our companies.

In our company, when we found we had some problems, we got a committee together of workers, management and our health services people. The union arranged for me and one operator from the union to actually do the job for two weeks. How can we make

Pete Turnau *continued*

a decision on change without some first-hand knowledge? This is education; it's something simple anybody could do.

We worked on a line for two weeks. We came up with a list of problems and we put up a suggestion box. Into that suggestion box came answers on everything that was on our list. We didn't have to go outside for experts; the experts were right there. The workers themselves, the management, the engineers, the professionals all have some information. Everybody can be involved. Once you get something decided, don't leave it hanging in midair; get feedback. Feedback is very important.

This Canadian Centre is an important information source. We tried for four years, without success, to get information. If the information that we received in our package had been available to us four years ago, we probably could have been ahead four years. Everybody who has attended this workshop now has contacts; we should be sharing information to help improve our situations.

We all agree that attitudes have to change—those of the workers, the management, the health people and the professionals. But you have to look for what is simple to do. Don't go for the pie in the sky approach; change attitudes through the team approach. A good idea that somebody takes credit for is bad news; if anybody on a team comes up with an idea, it's the team's idea not the individual's idea; and if something goes wrong, it's also the team. The team has to take responsibility—it's got to be the "we" attitude.

Where do you involve upper management? You have to show cost effectiveness; but things such as morale and productivity are also convincing. They are all side results of eliminating repetitive strain injuries.

At BC Telephone, we have eight fitness facilities and that has really changed the attitude in people's approach to work. If you feel good, you're going to work a lot better and feel a lot better about the job.

Bill McCance
Hayes-Dana Inc

I will address the problem of regulation. Everybody seems to be agreed that legislation is not going to be the answer to our problem right now. We have to address this problem now. I think that confident management will address it as a cost factor, get into several areas of science and use the information that is around to make changes in the work process to bring about that cost-effectiveness without being pushed by government.

Bill McCance *continued*

We would like to see guidelines, perhaps in a booklet understandable by all levels—from the worker on the floor, to the supervisor, to the technical people that support the worker and the supervisor, to the senior management group and to the users of the product. We would like to see it circulated through an organization such as the Centre. We hear that there are all kinds of materials and information out there, but we don't know where to get it; and very often we don't know how to apply it when we do get it. I feel that the preparation of a booklet geared to the sector that I described would serve that purpose; it would give focus to the people who want to make the changes.

There is limited knowledge about ergonomics. Within our organization, if you were to go to a foreman and workers and say we're going to do an ergonomics project, they wouldn't know what you were talking about. There may be all kinds of scientific information around but it's got to be brought down to the shop floor level. So the things that can be done will be done, and done now. The problem is now. The costs are now. People are being hurt now.

I spent many years in the first aid room, and I have seen more repetitive strain injuries than the average person. I know that there's no simple answer. I feel that we've got to stop it before it happens; you can administer to death but you're not going to stop anything. I feel that the present regulations, the Occupational Health and Safety Act, administered by an effective joint health and safety committee, can provide all of the drive that's necessary to get the job done.

Les Liversidge
L A Liversidge & Associates Ltd

I'm going to talk about the workers' compensation aspect of this. Everybody in our group reported that this issue had attracted a certain amount of controversial discussion. There's a general perception that RSIs are not attracting the workers' compensation that they should. It's rather a perplexing problem. In the information materials, you'll notice that there's a tremendous variance in policy applications from the many jurisdictions across the country. Perhaps one of the answers rests in analysis of why that is. Why are different jurisdictions treating this injury or disease differently? Perhaps it is because some consider it an injury and some consider it a disease.

That a cause and effect is not totally understood or established is perhaps the reason for this variance. Variance may be due to lack of a standard, lack of understanding of the scientific literature

Les Liversidge *continued*

that is available and perhaps lack of appropriate scientific research on the Canadian experience. Cause and effect to employment is an important consideration because of the funding aspects of workers' compensation in Canada. If the breadth of scientific knowledge is such that this is considered an industrial disease, most Acts allow for certain statutory presumptions with respect to causation. We feel that the workers' compensation policy in this area should not be addressed on an ad hoc basis from jurisdiction to jurisdiction with no regard or understanding as to what the other jurisdictions are doing.

One of the themes of the reports of the professional group and the labour group was that there is a need for the Workers' Compensation Boards to establish clearer policies and that there is a need for better training and a better understanding of the injury. We agree with and support those ideas. We think they will be fulfilled through a study examining the Canadian experience, detailing the Canadian experience and establishing an authoritative outline as to the nature of the disease and the degree to which it ought to be considered an industrial disease which attracts appropriate compensation. We do not believe that an appropriate solution is an ad hoc jurisdiction by jurisdiction political response to a scientific and medical matter.

Don Mitchell
The Oshawa Group Ltd

In our group it was decided to break up into little subgroups to do the presentations because it would make it easier on the recorder. Like all management decisions, the person who suggested it, promoted it and forced it through, left at lunchtime.

We lumped treatment and rehabilitation into one. We felt that if it is an industry problem then there has to be an industry approach to solving it; it should not be left solely to the medical community. There should be joint treatment design and joint rehabilitation design involving the medical, worker, employer and professional community. This will bring an integrated approach to the problem and draw from a very large knowledge base.

We challenge the National Research Council Associate Committee on Ergonomics to develop a standardized reporting procedure for data gathering for prevention purposes, to develop a Canadian data base, and to develop guidelines or a code of business practice based on those issues. We challenge the Centre to disseminate that information as quickly as possible.

Robert Webb

We have a meeting next month of the NRC Associate Committee and we will give all those ideas extremely serious consideration because those and other things need to be done. I'm not sure we'll be able to achieve all of those challenges, but those we do achieve are only going to be achievable through the collaboration of the groups represented at this workshop. We're going to get straight back to you in terms of begging for funds, for collaboration, for leverage, and for support because we have no funding—the National Research Council does but the Associate Committee does not. We have to impress upon other people that these things need to be done; we're quite willing to try, but we can't do it by ourselves. So if you're prepared to support us, we're prepared to consider the challenge. That is something that the large labour unions, the large firms and the professional associations ought to be expecting in about six to eight weeks' time—requests for considerable assistance.

Reaction Panel – Will it Work?
Senior Executives Respond

Lillian Vine

Thank you. The first person to react will be Bill Rozel on behalf of Government.

Government

Bill Rozel
Alberta Community & Occupational Health

As a Governor of the Centre, I have been hearing about the workshops and reading about them. I have never had the opportunity to be involved in one before and it's a great experience. I'm sorry I couldn't have been a participant and been involved for both days.

Clearly, we have to define the problem of RSIs. Dr Wells mentioned yesterday that the cause/effect relationship isn't extremely clear and that's been echoed by all of you.

There was a lot of talk about the percentage of injuries that are actually RSI types of injuries—a percentage of all WCB injuries ranging from 80 to about 40%. That the elements are force, posture and repetitiveness is obvious to us all, but we just don't have any quantitative data. Research is required and more work has to be done before we can come up with definitive solutions. We only have the vaguest idea of what the real costs of RSIs are; in my opinion, the vast majority of RSIs never reach the WCB system at all. The costs are in the medicare system; access to that area might be very useful to us.

You talked about establishing standards and the problems involved in standards in RSI. Most of the work that is available is in the form of guidelines and this is very useful information. Canadian guidelines are required.

There was a lot of talk about whether we could apply very specific kinds of standards. Are they possible? Are they needed? Specification standards probably aren't possible; the best we can expect is good performance standards; with those, we can approach the problem with the current legislation that exists in most jurisdictions.

A problem now is to locate the problem. The information that we get is so slim that it's difficult to say where the RSIs are happening. If I, in my jurisdiction, were going to attempt to approach the problem in any kind of programmed manner, I would have to know what worksites were problem worksites and what employers were having problems. The data that we now gather just is not adequate to properly do that. To correct the problem, you are saying, requires a combination of things, but mainly a redesign of problem

Bill Rozel *continued*

jobs, problem worksites and training of workers to work right I think that's a problem; it is difficult to work right if your job leads you to work wrong or if your worksite leads you to work wrong—there are limitations to what can be done through training.

Most of the groups did not feel that the sanctions that can be applied by legislative groups was a major way to approach the problem and I tend to agree. But we can do some things. We can shut down worksites if it can be established that they are causing injuries to workers—that can be done and is done in my jurisdiction. We can do a lot more dissemination of information. The guidelines that are produced and are being developed in many of the jurisdictions have to get out to the people who are affected.

In the definition of the problem, the costs are extremely important if we're going to convince senior management; they must understand what the costs are. The industry itself gathers a great deal of information that doesn't get into the normal systems. If there is some way to obtain solutions to problems, we have to get that kind of information and make it available to others. It was mentioned that the small worksites are a problem area that doesn't get addressed. Organized worksites and organized labour come to this kind of workshop. The small employer really doesn't understand that there is a problem. I think that government has a role in providing a service to that kind of worksite that cannot be provided in other ways.

The last few years of recession reduced most of the jurisdictions in this country considerably, such as the health and safety organizations and mines; we don't have the resources we once had. In my particular area, we're involved in keeping people from being killed on oil rigs. It's pulling more of our resources away that we once might have put into RSI. I can't promise a lot out of government; we do have powers in our legislation and we can use them, but we desperately need better information.

CCOHS has a major role in doing things such as what's happening right here—being a catalyst by bringing people together. The National Research Council has done a marvelous job on this as well. I think we have to review work in other jurisdictions; perhaps government can have a role. The Europeans are much ahead of us in the ergonomics field. In some areas, we have things to learn from the U.S. In the East, we seem to do little in our relationships with Japan and other eastern countries; perhaps we should be looking there. There's no point in re-inventing the wheel if other people have done it before and perhaps better.

The putting together of standards is a very expensive proposition if we're looking for specification types of standards. There are

Bill Rozel *continued*

standard-setting organizations in existence. They don't tend to work in the areas that we're talking about here. CSA (Canadian Standard Association) will be coming out with an ergonomics standard very shortly, but it tends to talk about the office environment and isn't nearly as broad as what we're looking for.

If we as regulators are going to do a job, we need to have a better idea of where the problems lie. We have to work with the Workers' Compensation Boards and other sources of information to find out where the problem exists in industry. If we identify worksites or employers with above average problems, we can require them to develop programs of redesigning their worksites, and training their workers; it's within the current legislative powers. We could increase the use and powers of committees. We have sanctioned powers that aren't used often in this particular area. We can stop the work on a jobsite. Fines are far less applicable in this area, but the boards in some jurisdictions use fines; for example, BC uses fines quite extensively. Working with the boards and with the powers of the boards should be explored.

The development of information will be useful as well as dissemination of that information, particularly to the smaller worksites.

One of the many problems is a lack of trained ergonomists. We have a lot of ergonomists in this country and in North America, but the proper training of ergonomists, the putting together of teams of people working in the field of ergonomics such as engineers, hygienists, safety specialists and psychologists is lacking. To my mind, ergonomy is a team activity and needs that kind of mixture to get the best results. Almost none of the government organizations have ergonomic units. In Alberta, we're just attempting to put one together. I hope that within a year or so we'll have an operating program, but only the larger jurisdictions are able to do that sort of thing.

Thank you very much for the work you've done. It's a very important area and one that's just beginning to get the attention that it really deserves.

Labour

Lillian Vine

Thank you very much Bill. Next is David Bennett on behalf of labour.

David Bennett
Canadian Labour Congress

Thank you very much Lillian. I'm here on behalf of CLC Executive Vice-President, Dick Martin. Dick is the CLC Officer responsible for workplace health and safety. My comments are in no particular order, but they are responses to the three groups that we heard earlier.

The so-called non-occupational contributions to RSI usually turn out to be a red herring. It's blaming something else, someone else for the worker's condition and doing nothing about it. It's a diversion. It may be true that there are non-occupational contributions to RSI. Maybe we don't know exactly how much they are to blame. But we are here to discuss the occupational contributions and to try to do something about them.

A similar comment applies to fitness and encouraging workers to be healthy and fit. It is quite fair for employers, unions or professional groups to encourage workers to be fit because they don't get fit through their work. But when you ask workers to become fit and healthy as a consequence of unhealthy conditions at work that damage workers' health, the burden is being shifted quite unfairly to workers. If people come away from work with blurred eyes, headaches, aches and pains, and then are told it's their fault, to go and get fit, that is an entirely unfair estimate of where the problem is and what the solutions are. Our priority has always been to remove the hazard at the source so that the problem doesn't exist anymore so we can get on with doing what we are paid to do.

A similar comment applies to monitoring workers' health over a long period of time and its relation to condition of work. I don't know a single monitoring program that has led to changes in conditions of work at the source. To say we don't really know how much of a problem we've got; or the whole workplace is noisy; or let's see what damage this does to workers' hearing; and ten years later to produce a complex web of statistics—this doesn't solve anything at all. There is no connection between the results of a monitoring program and information strategy. If people are really worried about noise or RSI, they will look at the problem and remove the problem at the source. Monitoring workers' health only takes place because people know, or strongly suspect, that there is a problem. If you remove the problem, there is no need to monitor.

There is a monitoring industry, which is mainly but not exclusively medical, dedicated to workers' ill health. If you create conditions at work that remove sources of ill health, then there is no need for this industry, for monitoring or for asking embarrassing

David Bennett *continued*

questions about the relationship between monitoring and the promotion of health. The questions are embarrassing because there is no connection. Monitoring is not designed to improve workers' health; it makes us victims, guinea pigs; it makes us the victims of an industry which we pressured to create to solve our problems and which has manifestly failed to do the job.

Some constructive things were said about RSI in relation to compensation. It's quite clear that adjudicators know little about conditions at work that lead to RSI and which in turn lead to compensation claims. We need a schedule of industrial diseases that includes RSI.

In my view, you won't get just compensation for RSI until the whole philosophy of compensation changes whereby the onus of proof is shifted from workers to the conditions of work. This would amount to a revolution in WCB policy. Revolution is usually a long time coming and often does not deliver the expected results. We in the labour movement have to ask ourselves how we are going to cater to all the thousands of cases of industrial disease which are probably due to work but which we can't prove.

Only with a universal disability scheme will you cater to disease in industrial society, whether the disease is caused by life-style, industrial conditions, or the environment. This is not meant to take the heat off the compensation system. There will still be a need to attribute "diseases" to the compensation system so that people get the just compensation that they need and deserve. It is no use pretending that all industrial disease will get justly compensated through the compensation system. We all have to think about a scheme of universal disability compensation similar to the one they now have in New Zealand.

The CSA, we believe, has been useful in providing standards for technical devices—physical safety measures. A general rule of thumb is that the more detailed and the more precise the standard is, the more constricted the area of interest of CSA, the more successful it is likely to be. In the area of health policy, we don't believe that CSA is the appropriate body for a complex and controversial question. We are asking a technical and rather small bureaucracy to devise a major area of health policy for all of Canada. I don't believe that kind of work should be done. CSA does not have the profile, resources or democratic structure to make tangible recommendations in the area of health policy. The whole thing needs to be more central, more national, with a higher profile and more effective contributions by labour and business. We do need a general standard on ergonomics, work design, and devices and conditions that cause RSI. I don't think CSA is the appropriate body or the umbrella organization to achieve that.

David Bennett *continued*

There is a lot of nonsense about team approval, cooperation and collaboration; about sitting down and solving the problem as if we lived in a society where everyone was either a manager or a worker and our interests were fundamentally the same, all our problems were due to a lack of communication, and there were no real differences between us. This is nonsense. If there are areas of common interest, and I believe there are, you have to sit down and argue things out. Sometimes it gets violent, abusive, and sometimes labour walks out or management protests they were misunderstood. All these things happen but it doesn't matter. The teamwork, cooperation, and collaboration don't matter provided that all the parties are more or less happy with the result and it will be effective when enforced.

If you want a national standard on ergonomics and ergonomic design, it must be legislated. A guideline or a code isn't good enough. It may be that 70% or 80% of employers, manufacturers or groups of workers will adhere to the standard or the guideline, but it won't be fully effective unless it's well known, entrenched and enforced. For example, on the workplace right to know, the Australians have produced by consensus a standard that is as good as the Canadian one. The Australian labour movement is well aware that unless it's legislated, it won't be effective, because it won't compel the "bad" 10% of chemical suppliers to obey the agreed guideline. If you leave something simply as a code of practice or a guideline it won't be effective for a lot of reasons. Most suppliers of office and workplace equipment, most designers of workstations will obey a code or a guideline if it's well known. Any national standard we have to produce has to be in the form of a regulation and enforced. If the free trade deal goes through, Canadian enforcement authorities will be under even more pressure to enforce laws because the general tone of things in the US is not to have laws or if you have them, to pretend they don't exist.

Compensation

Patricia Wellman
Ontario Workers' Compensation Board

I will focus on areas of special concern for the WCB. There was a lot of talk today about the reporting mechanisms, the problems with reporting by employers and union groups, and the WCB Form 7s which appear not to adequately capture the necessary information for RSIs. I agree with you. The Policy Branch of the WCB of Ontario has found, not only (in terms of RSIs and others) that section 40 of the Act and the return to modified work issues also present some reporting and form-design problems.

Patricia Wellman *continued*

Before we can gather the information, we need to be able to properly adjudicate these RSI types of claims. Accident data is not entirely appropriate information to be seeking when dealing with something that has a gradual onset.

There is also the question of the timing of reporting; that is, when the forms ought to be submitted to the WCB, although not necessarily for awarding compensation. Individuals may report symptoms before a claim is actually made. It would be helpful to the WCB if information were recorded in the employer's first aid or union offices that would help to eliminate, once a claim is made, the sometimes lengthy investigations of the history of the claim. The Board might not use the information until a claim is made, but it would be helpful if that sort of information was kept and reported at the place of employment.

Over the past months, the WCB has been developing an agenda to identify some of the major policy areas which, to date, have not been dealt with effectively; these come to our attention through the Workers' Compensation Appeals Tribunal or other stakeholder groups. One of the largest items on that long agenda is RSI. Policy at the Board has not been developed in a very centralized way in the past and that has led to all kinds of problems. RSI is a new umbrella term which I have heard used only in the past year or so. I am more familiar with the terms carpal tunnel syndrome, tenosynovitis, and bursitis. We are beginning to look at repetitive strain injuries as a major policy item. The Board has recognized that the area should be looked at in terms of the adjudication process.

In attacking the question of RSIs and their compensability under the Workers' Compensation Act, a number of other policy items emerge. We are conscious of how difficulties may arise when looking at RSI vis-à-vis the whole question of disablement. Is RSI really an industrial disease or is it a disablement? At present, the Board handles tenosynovitis and other repetitive strain injuries under its disablement policy and uses those guidelines and criteria to arrive at decisions.

There has been little development in the RSI policy, and one of the things that the policy area will have to address is the inadequacy of the current disablement provision to deal with RSI. Little use has been made of the industrial disease definition in the Act.

Another question that will probably be raised in the policy development will be "Do we want RSI to be scheduled?" I don't think we can answer that question without looking closely at the entity. Is it something that we can schedule? Or will we be better

Patricia Wellman *continued*

off with guidelines that will provide a little more flexibility for the individual case? It is early in the game. Maybe there is too much unsettled in the medical literature to be able to suggest that all RSIs ought to be scheduled. That question will be seriously looked at by the Board when it is forming its position on RSI.

I would like to touch on rehabilitation. Prevention is the key. RSIs are occurring in great numbers in industry. The Board is proposing to expand the whole area of medical rehabilitation under the Act. The Board has its vocational rehabilitation services, but few can be pointed to as medical rehabilitation programs, even though the Act talks about medical rehabilitation. We intend to help workers be rehabilitated back into the work force after/or during the life of the injury. We are considering the feasibility of a three-layer medical rehabilitation program dealing with community-based clinics, where the problems common to particular industries could be explored more carefully; regional centres where complex chronic cases could be looked at more carefully; and a medical rehabilitation institute under the auspices of the WCB. There would be some research and training on the complex diagnoses of injuries we see in the workplace, research on epidemiological studies, and looking at clusters of groups in industry where these claims appear to be occurring. That information would be fed back through the Ministry of Labour so the Ministry can take some steps with employers.

We recognize that something as complex as RSI can't be handled like one of the more common industrial injuries; it's not a broken finger or any other sort of traumatic thing. There is a lot of common knowledge on the issue. We are conscious that we have to do something to deal with these injuries that haven't been adequately compensated or adjudicated.

Regulation—I agree; policy and guidelines that have received the cooperation of all stakeholders is the way the WCB is going. The Board is embarking on designing an external consultation process for developing better policies with contributions from all parties. This has not been done in the past. Policy-making has been ad hoc and not based on a lot of scientific or other knowledge. I think we are going to see the new Policy Branch tending to look first to the statutory language and then to medical and other sorts of literature to assist in making policy decisions that will provide the kind of coverage to injured workers that has not been provided before.

Industry

Franz Reiterer
Magna International Incorporated

I would like to focus on two key areas—awareness and prevention. We could substantially decrease the cost of Workers' Compensation claims by recognizing and focusing on education as the key. We must take preventive steps and deal with potential problems before they exist. To do this, strong commitments are needed from the top management of any corporation to support the educational process throughout the company. Education and awareness should be expanded, not only within the joint health and safety committees, but throughout all levels within an organization right down to the shop floor.

I agree with the proposal that there should be an ergonomics committee. It makes good business sense because if we focus on our employees in these key areas, the results should be higher productivity and better quality, as well as a decrease in the number of workers' compensation claims. The emphasis has to be on prevention. Many things can be done and some are already being done. There is definitely a need for expertise in the area of ergonomics but there are many things we can improve simply which would help to reduce RSI.

The key is prevention and education. Let's get started now rather than wait until we are forced through legislation. Let's be pro-active.

Questions

Pat Hayes
Canadian Automobile Workers

I agree with Dave Bennett's comments about regulations. I believe it is necessary because there are corporations that you have to regulate and legislate to ensure that they will attempt to protect the health and safety of their employees. I would like to ask people who don't agree how they deal with that 10% that won't do anything unless legislated.

Patricia Wellman

I am referring to the scheduling of the disease under the Workers' Compensation Act or any other legislation. Regulation of health and safety is another question.

Franz Reiterer

When I said I don't believe in waiting for legislation I meant it is much better to be pro-active. It makes good business sense to do the right things in education and prevention. I am sure there

Frank Reiterer *continued*

is a definite need for legislation but it should be geared to prevention.

Serge Trudel

People say that we don't know enough, that we have to study the matter, and wait before making regulations or taking action.

It seems to me, judging from the presentations and the conclusions of the workshops, that the problems related to repetitive strain are created in the workplace. My question, then, is this: why not close these workplaces, pay employees until we find out what movement creates what problem, and then reopen the workplaces once we have the necessary regulations? Workers are having health problems and operations, they're losing their jobs—I don't think it's a very good idea to tell them they must wait. Right now there are certainly things we could be doing with the knowledge we have. We should start taking corrective measures at source rather than doing studies on the precise cause/effect relationship which may explain the problems. I think we have enough information; it's time to take action. If there is any research to be done, it ought to relate to new solutions and means to correct the problems at source.

Paul Moores
BC Telephone Co

We have had success with an ergonomics committee in our shop. One of the things that disappoints me is the suggestion of Bill Rozel of what the government of Alberta could do. As the old ad goes for the Fram Oil Company filters, "If you don't pay me now, you pay me later." In BC, and I would imagine it is the same throughout the country, governments are squealing in pain over the cost of medical care. If we don't educate on the ways of doing things right at the jobsite, those costs will not be reduced.

A comment to my brother from the CLC; I was a little disappointed in some of the negative comments you had to make. We have waited for companies to do it on their own for long enough. If they need us there to push to get things done, I really don't care if somebody suggests that I am sitting on the corner of the bed with them. I will be glad to do it to get the job done.

Bill Rozel

I don't think I said that nothing can be done. I think I said that there were many things that could be done and, indeed, we're doing them in Alberta. We don't hesitate to order an employer to change

Bill Rozel *continued*

a workplace if we have the data to indicate what changes should be made. What I did say was that there's a great deal of data and problem definition we don't have that would make it possible for us to take better actions. I agree that preventive activity saves money in the long run. Unfortunately, our budgets can't stand, at this particular time, increases in activity; we just don't have the money even though we know that additional preventive activity would be useful in the long run.

David Bennett

I don't think anyone has been claiming that worker education was irrelevant or that it wasn't needed. My point was that if you compare the resources that are spent by employers and the community on the occupational hygiene profession and worker education, you can see that an enormous amount of the burden of occupational health falls on workers.

How much are employers actually spending on prevention at the source? Are they employing industrial engineers to sort out problems so that people are no longer afflicted with industrial disease? I think merely asking the question provides the answer—the amount of employers' resources actually spent on changing workplaces is very small. Of all the resources spent on health and safety, little is actually spent on providing safe, clean and healthy working conditions for workers. That's what we've been trying to achieve for decades but haven't achieved because for one reason or another the resources are all going elsewhere. You could say that too much is spent on research and sampling.

I think Serge Trudel is quite right. There is a presumption that what we're dealing with is a very complicated issue, that we don't have all the facts, that we need to investigate the cause/effect relationships. This isn't true. When you're dealing with something as simple as repetitive strain injury, the first and most effective thing that you can do is ask the workers if they feel content with the way their job is organized; if they are happy with the equipment provided; if they go home feeling healthy; if their work is safe; if they work in a clean establishment. We're not talking about complex causes and results such as in cancer. We are talking about pains in fingers or blurred vision as a result of work done with equipment provided—it's a simple question, and it's a simple answer.

The sort of question that Patricia Wellman has raised is an important one. If you're going to compensate such cases what standards of proof do you need? The mere fact that you've worked for several months with something that gives you aches and pains is enough on common sense grounds for you to be compensated under the

David Bennett *continued*

Workers' Compensation system in the province of Ontario. But bureaucrats aren't allowed to work on grounds of common sense—they must have proof. If you try to prove a systematic across-the-board connection between the various categories of repetitive strain injury and the various categories of work environment and work equipment, you won't do it, or if you do, the workers will be dead before you've reached a conclusion.

What you need in almost every case is a rare condition of work and a rare disease. But for a relatively common injury, such as aches and pains in hands, limbs, fingers and relatively common conditions, there will also be someone to say to a compensation board that it wasn't caused by the cash register at work but by the crossbow the worker enjoys firing in spare time. That becomes the complicating factor which is claimed so complicated that compensation should not be awarded and the appeal should be overturned; and usually the worker loses.

Even putting RSI in a schedule, or exercising common sense is not going to provide the whole answer in terms of a compensation scheme. It's depressing to have to admit that common sense is not going to work. Employers and their consultants are not willing to let cases go when the burden of common sense quite clearly says that work is to blame. We have to have a whole industry devoted to research, etiology and causation for people to get elementary rights. That's why, more in despair than anything else, the labour movement is coming around to the view that you have to have an automatic adequate compensation system for all cases of disability, irrespective of cause. This is not a complicated matter of cause and effect. If you ask workers about the relation of their work to their complaints, you'll all get the answers you need. But it's a political matter to actually act on that. We won't solve the problem unless people are prepared politically to resolve it.

Garth Dee
Toronto Workers' Health and Safety Legal Clinic

Two questions for Patricia Wellman. Does the Board have any investigators trained in the recognition of repetitive strain injuries or ergonomics? What is the effect of the inclusion of bursitis and tenosynovitis in Schedule 3 of the Workers' Compensation Act on Board policies for compensating those two conditions?

Patricia Wellman

To my knowledge, there aren't any investigators at the Board who have undergone special training in repetitive strain injuries or the multiple diagnoses that we see under that heading. One of the complaints is that we don't have enough investigators who are

Patricia Wellman *continued*

familiar enough with the questions that have to be asked to elicit the kind of information that's needed to adjudicate the claim. I will make sure that the appropriate people at the Board hear about the concerns of this group when it comes to investigating repetitive strain injuries in the workplace. Those claims tend to take a long time to adjudicate and questions don't get asked at the work site; often only the employer's view was obtained; or the worker was spoken to sometime later when the employer's information was already on file. That could work prejudice against the worker. It is important to obtain as much information from all knowledgeable parties as close to the actual occurrence as is practicable.

The second question that you raise is probably one of the first things that we'll have to look at when we look at the policy on repetitive strain injury. I'm not familiar enough with the schedule to know why tenosynovitis and bursitis are in the schedule. I suspect they were the most common diagnoses or problems that medical practitioners were seeing in the population. For whatever reason, the government of the day decided to put them into the schedule.

We're aware of the inconsistencies that arise in carpal tunnel syndrome cases versus tenosynovitis cases versus other sorts of repetitive strain injuries. They appear to be handled under the disablement policy. If you look back historically, even though they're in the schedule, they have never been handled as industrial diseases within the Board. They've been handled as traumatic accidents under our usual adjudication process. One of the first things the new Occupational Disease Department and Policy Branch have to agree on is the definition of disease for inclusion in the Act. To date, it hasn't included carpal tunnel syndrome. It's been handled like any other accident. We have to be consistent. If it's in the schedule, should the others be? Should we take them all out of the schedule? I cannot answer how we're going to handle it, but we're very conscious of the inconsistency which will produce inconsistent results in adjudication. That will be dealt with in the new policy.

Claudette Therrien
United Steelworkers of America

I'm local president at a plant called Iona Appliances in Welland. I'm very frustrated with the RSI issue because it is totally out of control in our shop. I would like Patricia to request a Board representative to view the type of repetitive work that is being done. Do if you have physicians that wish to come down and examine victims of RSI?

Claudette Therrien *continued*

I do not favour the system we have now; the company has hired an outside chiropractor who comes down approximately every two weeks and does a taping procedure on our employees. So at 7:30 in the morning they are taped at both wrists and they work for a period of eight hours with these tapes to prevent excessive movement of their hands. I am a member of the health and safety committee, and I ask myself whether to oppose the method or go along with it for a time. Well I'll tell you, we've had it up to here. We still have cases of CTS, tenosynovitis, ganglion cysts, shoulder problems and whatever they call this section in here that has a problem in the muscles (pointing to the elbow area).

To help our people in our shop, can we get someone down from the Board? Can we force our company to allow these people in so that we can have a survey dealing with the problem of RSIs? We have won some and lost other cases that we have taken to the Board. It took two-and-one-half years to prove one case of tenosynovitis. We have spoken with your adjudicators from the Decision Review Branch. We've brought the work with us; we've explained the procedure of the work; the claims were still denied. It was not until an appeal procedure, which took two years to almost the day of disablement, that we were able to have this claim heard.

Patricia Wellman

We have four work site analysts at the Board; they go in after an injury to attempt, in a permanent disability situation, to assist the worker back to meaningful work in the plant. I don't see it, and I think I'm speaking for the Board, as the work site analyst's job to go in to try to fix what's wrong in the plant. This might be the territory of the rehabilitation counsellor in the context of an individual case. If there are cases of people being laid off work and losing time, at some point there probably is a rehabilitation counsellor involved, and I think that a physical assessment could definitely be done. Normally, our medical doctors would never travel to a place of employment to view the work; that's really not their function.

Lillian Vine

We don't use evaluation forms because I've not found one that I really liked, but we do want your comments. We'd be delighted to hear them at or after this workshop or by mail or telephone. We take them seriously because we want these workshops to work; we think they do work; but we listen to your comments and always try to improve.

I want to thank Bill Rozel, Franz Reiterer, Patricia Wellman and David Bennett, our reaction panel. I'd also like to thank the opening

Lillian Vine *continued*

panel who occupied these seats yesterday and many of whom stayed throughout—both your presentation and your participation have been terrific.

I also want to thank Martin O'Connell, the chairman of our Council of Governors, and members of the Council, David Bennett and Bill Rozel. Council set the direction for the Centre to facilitate people coming together, looking at difficult issues, putting in their insights and value judgments. I want to thank you because I think it's working and that makes my job exhausting and exciting.

I want to thank Bob Webb and Gary Cwitco of the Associate Committee on Ergonomics of the National Research Council for bringing this request to us and for all their help in planning and executing this workshop.

Anyone can request a workshop. We do workshops on request and on approval by the Centre's Executive Board. I have heard a lot about modified work. Somebody mentioned in our Workplace Back Injuries Workshop that this is a subject on which we should be holding a workshop. If you really feel that that's needed, please ask us.

Gary, I would like you to say a few words about how this workshop met your expectations and I'd like to ask Martin O'Connell to bid you good-bye before we leave. Thank you all so much. You came, you shared, you discussed, and you found agreements which you had perhaps not expected—the work has been yours. The proceedings will be out during the summer and a summary within two weeks. This is your document, you created it; many Canadians will read it, learn from it and be motivated towards change by it.

Gary Cwitco
Communications and Electrical Workers of Canada

The NRC Associate Committee on Ergonomics requested a workshop on RSI because the Committee, which has representatives from industry, labour, academia and government agencies across the country, saw a serious and disturbing trend of an increase in RSI. And at the same time, a serious and disturbing trend of inaction in dealing with the problem, a lack of resources, a lack of understanding, and a lack of movement in a whole range of areas. Many of those areas have been discussed today.

There are always frustrations and pleasures about any workshop. Expectations you have about the possibility of change are difficult to achieve. One of the things which is most encouraging is that there is a recognition and an understanding that we need solutions in the workplaces now. The challenge is to attain a level of

Gary Cwitco *continued*

consensus about what those needs are and then to implement changes. We've gone part of the way in coming to grips with some of the things that need to be done—we haven't come all the way. There's an obligation on the participants to use the resources that are in our hands, in our individual work environments, to make change. In the broader context, we won't solve RSI problems in a workplace by a workplace task analysis of every job done by a Canadian worker that causes RSI. That isn't going to happen. The resources simply aren't there. The broader ideas that have been discussed here and that appear to have some kind of consensus need to be acted upon. We all share the responsibility for taking those actions.

You threw a challenge to the NRC Committee and the NRC Committee will be pleased to take up that challenge. But the challenge is to all of us to act on the recommendations and to act on the information. Where there is no consensus, we will continue to struggle to find common ground for change—change in policy at a compensation or government enforcement level, in decision-making procedures in the workplace environment, in better education at professional and non-professional levels. Fundamentally, the challenge and the responsibility falls to those of us who are stakeholders in "working" society to ensure that what we know needs to be done to prevent RSI turns into actions that are implemented in the workplace. All the talk in the world won't amount to anything if that talk doesn't turn into changes in the conditions of work. We've made a start. How we finish remains to be seen.

Martin O'Connell

I welcome the opportunity to say good-bye not having been able to say good morning and welcome to you. I'd like to begin by thanking you, on behalf of the Council of Governors and Gordon Atherley, who is in Vancouver, for your participation and all the effort you have put into this workshop. Thank you, and congratulations on the results!

But you'd agree that I should leave you under the favourable impressions created in the workshop. Speaking for myself, I am very impressed with the scope of the work done in the workshop. They're called workshops for a good reason because they're not seminars, they're not the delivery of prescriptions, they're places where people come together to look at the issues, to look at the questions which they raise in the presence of each other, to hear each other debate those issues and to identify far more common ground than they believed existed when they went into the workshop, to explore that common ground and hopefully to enlarge

Martin O'Connell *continued*

it. That is the process that the Centre has launched. It's one that would come naturally to a Council of Governors such as ours because we're tripartite.

There are 11 governors sitting at the Council table representing management; 11 governors representing unions; and 16 governors who are senior officials in their respective provinces, the 2 territories and 4 from the federal government departments and agencies—16 public servants who can be seen as the regulators. It comes naturally to a Council such as ours to seek to do things by consensus processes, but it's only people like you who breathe life into them when you come to a workshop. You're going to go out there now and take some action based upon the common ground you've discovered and the issues you've revealed to each other, and debated frankly with each other.

The Centre isn't NIOSH. It doesn't publish model standards. It isn't like national institutes in other countries that put out standards. It hasn't been given that mandate in the kind of federal jurisdiction country we are. But you can give the Centre far more influence than you can imagine; almost, in a sense, its powerlessness is one of its great strengths because it brings you out to develop, resolve, and act on your own.

One of the greatest tragic dramas in the English language is Hamlet. The great lesson in Hamlet was that Hamlet who knew he had to do the deed, couldn't bring himself to do it—he lost the will to act in the energy of resolving to do it. One of the consensus themes which arose in the context of this workshop was the will to take action, the desire to move forward on the common ground and do something soon, not in an indefinite future. I heard people saying "now" and "there's enough known to proceed some distance." I think you're also saying "the way forward is jointly." It isn't the medical profession, employers, or labour standing alone devising plans. It isn't only the regulators. It's jointly coming together around the problem and around action programs.

Thank you very much for coming and working with us. The mandate of the Centre is to cooperatively advance occupational health and safety in Canada. So do count us in. Count on our desire to respond to the kind of tasks you think we can perform. In the end, you have to devise the action strategies; we can help. We are really what you make us—you must see us that way—we don't live without you. You have to put it into the Centre to get it out—you're the stakeholders.

Thank you very much for allowing me a little time to say good-bye.

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